UNIVERSITY OF SOUTHAMPTON

FACULTY OF BUSINESS AND LAW

School of Management

Capital Structure, Corporate Cash Holding and Dividend Policy in African Countries.

By

Joseph Yensu

Thesis for the degree of Doctor of Philosophy

July 2014

UNVERSITY OF SOUTHAMPTON

ABSTRACT

FACULTY OF BUSINESS AND LAW

SCHOOL OF MANAGEMENT

Doctor of Philosophy

CAPITAL STRUCTURE, CORPORATE CASH HOLDING AND DIVIDEND POLICY IN AFRICAN COUNTRIES.

By Joseph Yensu

This thesis centres on capital structure, corporate cash holdings, and dividend policy in African countries. Three different areas of research are followed and, employing different estimation techniques and methods, this thesis offers the following results: Firstly, the leverage trends across the countries are very low and stable, with country and firm specific factors playing a significant role in determining the level of leverage. Secondly, corporate cash holdings in the countries are significantly determined by the firm level factors with stable trends. Thirdly, dividend payers are more profitable, have larger firm size, greater investment, high retention of earnings and less financial leverage than non-paying firms. In countries where GDP is low, firms are likely to pay dividends, and non-payers of dividends have high levels of corruption. Country and firm factors are significant in determining dividend.

The thesis makes the following contributions to the literature: First and foremost, the dataset used covers a much longer period and a larger sample of African firms. Secondly, there is a cross-country comparison, which is rare in most previous studies. Also, both firm and country specific factors were considered when determining the relationships. More importantly, the thesis is the first research to confirm that Pecking order and Trade off theories are robust vehicles for explaining differentials in capital structure and corporate cash holdings in Africa.

In conclusion, this thesis provides the following public policy recommendations: Governments should strengthen their institutional frame-works for good governance and rule of law, and support the capital and stock markets to attract investment, and also have a positive effect on business and industry. They should also ensure efficient management of the banking sector operations in order to reduce the interest rate by reducing inflation, and encourage domestic savings and their sustainability, thereby boosting the financing of firms and private sector development to create more job opportunities and growth. Finally, policy makers need to set up special funds which firms can tap into for research and development, to develop innovative ideas, introduce policies against political instability, corruption and political manipulation, to ensure total economic growth.

Table of Contents

ABSTRACT ..... **i**

Table of Contents ..... **iii**

List of Tables ..... **vii**

List of Figures ..... **ix**

DECLARATION OF AUTHORSHIP ..... **xi**

Acknowledgements ..... **xiii**

Chapter 1:Introduction **1**

1.1 Aim 3

1.2 Overview 3

1.3 Theoretical foundation linking the three empirical chapters 5

1.4 Structure of this Thesis 13

Chapter 2:Data and Research Methodology **15**

2.1 Data and sources 17

2.1.1 Data 17

2.1.2 Sources 18

2.1.3 Variables and definitions 19

2.2 Distributional properties for variables 23

2.3 Research Methodology 27

Chapter 3:Capital structure trends in selected Africa countries **33**

ABSTRACT **35**

3.1 Introduction 37

3.2 Theories and definition of capital structure 39

3.2.1 Trade-off theory 40

3.2.2 Pecking Order theory 40

3.3 Determinants of capital structure: and hypotheses development 43

3.3.1 Leverage 43

3.3.2 Leverage and investment opportunities 43

3.3.3 Leverage and profitability 44

3.3.4 Leverage and firm size 46

3.3.5 The non-debt tax Shield 47

3.3.6 Target payout 47
3.3.7 Country governance factors (rule of law and corruption) 48
3.3.8 Banking development 50
3.4 Empirical findings 51
3.4.1 Descriptive statistics 52
3.4.2 Determinants of capital structure 61
3.5 Conclusions and implications 66

Chapter 4:Corporate cash holdings across African countries 69

ABSTRACT 71
4.1 Introduction 73
4.2 Theories of corporate cash holding 75
4.2.1 The Trade-off theory 75
4.2.2 Pecking Order theory 75
4.2.3 Transactional Cost theory 76
4.2.4 Precautionary Cost theory 77
4.2.5 Access to finance and corporate cash holdings 77
4.2.6 Access to finance and economic development 78
4.3 The determinants of cash holding and hypotheses development 79
4.3.1 Financial leverage 79
4.3.2 Cash flow 79
4.3.3 Capital expenditure 80
4.3.4 Firm size 80
4.3.5 Dividend payout 81
4.3.6 Net working capital 81
4.3.7 Market-to-book ratio 82
4.3.8 Return on assets 82
4.3.9 Rule of law 82
4.3.10 Gross domestic product and cash holdings 83
4.4 Empirical findings 84
4.4.1 Descriptive statistics 85
4.4.2 Determinants of corporate cash holdings 94
4.5 Conclusion and implications 100

Chapter 5:Dividends policy across African countries 103

ABSTRACT 105

5.1 Introduction 107
5.2 Theoretical overview of dividend policy 109
5.3 Empirical evidence of dividend policy: hypothesis development 113
5.3.1 Investment opportunities and dividend payout 113
5.3.2 Profitability and dividend payout 113
5.3.3 Firm size and dividend payout 113
5.3.4 Financial leverage and dividend payout 114
5.3.5 Country specific factors and dividend payout 114
5.4 Empirical findings 115
5.4.1 Descriptive statistics 116
5.4.2 Determinants of dividend policy 126
5.5 Conclusion and implications 130

Chapter 6:Conclusion 133
6.1 Overview 135
6.2 Chapter Three: Capital structure trends in selected Africa countries 135
6.3 Chapter Four: Corporate cash holdings in African countries 136
6.4 Chapter Five: Dividends policy across African countries 137
6.5 Summary and public policy implications 138
6.6 Limitations of the thesis 139
6.7 Areas for further research 141

Appendix A: Bloomberg list of fields, fields mnemonic, filed description/definition & measurement 143

Appendix B: Country factors (macroeconomic factors) from World Bank Development Indicators 2012 146

Appendix C: Country factors (governance factors) from World Bank (2012) Worldwide Governance Indicators 147

Appendix D: Distributional properties for all selected variables in each country 149

References 157

List of Tables

Table 2.1 Total number of firms in each country 18
Table 2.2 Paper One variables and definitions: Capital structure 19
Table 2.3 Paper Two variables and definitions: Corporate cash holding 20
Table 2.4 Paper Three variables and definitions: Dividend policy 21
Table 2.5 Distributional properties for all selected variables 23
Table 3.1 Summary variables and definitions 51
Table 3.2 Summary statistics median trends of variables across firms 52
Table 3.3 Leverage trends across countries 1994-2011 56
Table 3.4 Summary results of fixed effect and general method of moment 61
Table 4.1 Summary variables and definitions 84
Table 4.2 Summary statistics of firm and country characteristics across firms in the sample 1994-2011 85
Table 4.3 Evolution of corporate cash holding across African countries examined in the sample 1994-2011 88
Table 4.4 Summary results of fixed effect and general method of moment (GMM) 94
Table 5.1 Summary variables and definitions 115
Table 5.2 Descriptive statistics of dividend payout decisions 116
Table 5.3 Trends in median dividend payout across African countries in the sample 118
Table 5.4 Differentials of payers and non-payers of dividend across the countries 120
Table 5.5 Median differentials values of payers and non-payers of dividend payout across firms 1994-2011 122
Table 5.6 Pair wise correlation matrix coefficient between selected variables 125
Table 5.7 Summary results of fixed effect and general method of moment 126

List of Figures

Figure 3.1 Trends in median logarithm leverage across firms in the sample 53
Figure 3.2 Trends in median investment opportunities across firms in the sample 54
Figure 3.3 Trends in median profitability across firms in the sample 54
Figure 3.4 Trends in the median target payout across firms in the sample 55
Figure 3.5 Trends in median leverage across countries in the sample (1994 - 2011) 58
Figure 4.1 Evolution of median cash holdings across countries in the sample 1994-2011 90
Figure 4.2 Cash holding across firms in the sample 92
Figure 4.3 Cash flow across firms in the sample 93
Figure 4.4 Capital expenditure across firms in the sample 93
Figure 4.5 Return on assets across firms in the sample 94
Figure 5.1 Differentials in median profitability of payers and non-payers across firms 123
Figure 5.2 Differentials in median investment for payers and non-payers across firms 124
Figure 5.3 Differentials in median firm size of payers and non-payers across firms 124
Figure 5.4 Differentials in median corruption of payers and non-payers across firms 125

DECLARATION OF AUTHORSHIP

I, Joseph Yensu declare that the thesis entitled

Capital Structure, Corporate Cash Holding, Dividend Policy and Revisiting the Link between Financial Development and Economic Growth in African Countries

and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- This work was done wholly or mainly while in candidature for a research degree at this University;
- Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- Where I have consulted the published work of others, this is always clearly attributed;
- Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- None of this work has been published before submission.

Signed: ……..

Date:…….

Acknowledgements

This project could not have been fruitful without the support of others. I first of all give thanks and praise to the most High God for sustaining me throughout this period.

This project was undertaken for my PhD thesis at the University of Southampton. I must express my sincere gratitude and acknowledgment for the support from the academic and administrative staff in the School of Management, staff in the Postgraduate Research Centre and the School of Social Sciences at the University of Southampton. I am also grateful to Taufiq Choudhry, my second supervisor and Debbie Evans. I also thank the Kumasi Polytechnic for allowing me study leave to pursue this programme.

Various chapters in this thesis have been successful, following my participation in the University of Southampton School of Management PhD seminars, Southampton, UK, the 3rd African Accounting and Finance (AAF) conference, Kampala, Uganda (2013), the 2nd Interreg conference, Southampton, UK (2012), the 3rd British Accounting and Finance Conference in Emerging Economies, 10th Workshop, London, UK (2013), the 3rd Interreg conference, Deauville, France (2013), Doctoral Colloquium attended during the conferences in Kampala, Uganda (2013), France (2013), and Southampton (2012), as well as comments received from Global Conference on Business and Finance, Hawaii, USA (2014).

As with any other field of endeavour, one's success depends immensely on the contributions of well-meaning individuals towards one's pursuit. I am therefore highly obligated to my supervisor, Gerhard Kling, for his maximum support, advice, guidance, and patience as well as the numerous suggestions he gave throughout the programme. His supervision has been excellent. He organised seminars for his entire student body, of which I was part, and has contributed significantly to this thesis.

My thanks and appreciation also go to my parents for their support, guidance, patience and prayers which have brought me this far. To my mother, Julian Tawiah, I salute and say thank you for your love and care. To my father, Samuel Ackah Yensu, thanks for your patience and guidance in supporting me.

Furthermore, my appreciations go to the following friends and families: Kwesi Prah, Michael Kodwo Adjalo, Michael Monak, Mathew Eghan, Fiifi Amoako Johnson, Collins Ntim, Harry

Gibbs, Fiona Lindsaey, Gifty Amoako-Johnson and Faustina Frempong. Special thanks to all my PhD colleagues especially, Layla, Kate and Deogratius.

I also thank my dear and lovely wife, Florence and our children David, Eben, Theodora and Dorcas, who's every support and prayer for me I have appreciated and benefited from more than words can express. I say, God bless you all.

Chapter 1: **Introduction**

1.1 Aim

The aim of this thesis is to examine trends in, and determinants of, capital structure, corporate cash holdings and dividend policies of listed non-financial firms in Africa countries. It examines the effects of firm and country specific factors on capital structure, corporate cash holdings and dividend policy. The thesis also investigates whether existing theories are applicable for explaining capital structure, cash holdings and dividend policy in African countries.

1.2 Overview

Compared to the developed world, very little research has been done in African countries about the capital structure of firms, dividend policy and corporate cash holdings. Even though there have been several individual studies, they have been limited in scope. Most of these studies have been limited to determinants of the capital structure, dividend policy, and corporate cash holdings of firms in specific, individual countries, or, at best, looked at the relationships of these to firm specific factors. There is a growing need for African countries to wean themselves away from the Breton Woods Institutions, but the only way out is for indigenous African firms to lead the way by increasing the pace of manufacturing. This has several benefits, or ripple effects, for gross domestic product growth, employment creation, expansion of government revenue through taxation, retention of foreign exchange through the reduction in import of consumer goods, and general expansion of the economy and sustained growth. These can be achieved when firms are well positioned to increase productivity and investments, which is possible when enough capital is available to the firms. Capital, and how it is distributed and used in a firm, has been found to be the single most important factor for firm growth in Africa (Abor, 2008). It is therefore important that firms avail themselves of the information and knowledge about corporate financing issues to operate effectively. However, the limited research in R&D among African firms has made it difficult for firms to acquire the necessary information.

This study therefore provides the necessary information about the determinants of capital structure, dividend policy and corporate cash holdings, at both the firm and country level, to help firms in their capital or finance decisions in African countries. The study was also motivated by the trends' effects of shocks and risks at specific times. Therefore, the growth and performance of firms in African countries would be made known to investors and also provide a thorough understanding of how country and firm factors influence capital

structure (leverage), dividend policy and cash holding in African countries. Since most countries in Africa aim to attract direct foreign investment and also to reassure investors when investing in firms in Africa, the trends will provide complete evidence about the direction for potential investors and new competitors, to enable them to make conclusive decisions to invest in Africa. There was also the need for a single study with wider application across Africa, and this study, covering several African countries, provides this, to enable investors to make informed decisions regarding investment in these countries. The research also provides opportunities for future research into capital structure, corporate cash holdings and dividend policy in African countries.

Using a panel dataset of 608 non-financial listed firms from 14 African countries, and employing different estimation techniques and methodologies, the relationship between firm level characteristics, as well as country level characteristics and capital structure, corporate cash holdings and dividend policy, has been established in the African context. The impact of financial systems, firm and governance factors on capital structure, dividend policy and cash holdings have also been examined.

This thesis extends the literature about capital structure, dividend policy and corporate cash holding by considering the dataset over a longer time period and undertaking a cross-country comparison. The thesis is also unique, especially in the context of African countries, because of how it combines both firm and country level factors and characteristics. It can be said also that this research is the first to confirm that Pecking Order and Trade-off theories are robust vehicles for explaining differentials in capital structure and corporate cash holdings in Africa.

1.3 Theoretical foundation linking the three empirical chapters

This section provides a summary theoretical link between the empirical chapters in the thesis and the gap they fill in the current literature in the context of Africa. Three different, but related, areas of research have been studied in this thesis. The first paper deals with Capital structure trends, the second paper concerns Corporate cash holdings, and the third, Dividends policy. Even though these three topics are distinct from each other, they are, to some extent, related

The first link is between Dividend policy and capital structure. A Dividend Policy is the decision made by the directors of a company and relates to the amount and timing of any cash payments made to the company's stockholders. The decision is an important one for the company as it may influence its capital structure and stock price. On the other hand, Capital structure is a term that describes the proportion of a company's capital, or operating money, that is obtained through debt versus the proportion obtained through equity.

It is argued that a dividend announcement provides shareholders and the marketplace with the missing piece of information about current earnings, upon which their estimation of the company's future earnings is based. These expected future earnings have been found to determine the current market value of a company. The dividend announcement, therefore, provides the missing piece of information and allows the market to ascertain the company's current earnings. These earnings are then used in predicting future earnings. In a study by John and Williams (1985), a signaling model was constructed in which the source of the dividend information is liquidity driven.

Faulkender *et al.* (2006, p. 1) state that "for the most part, theories of dividend policy differ from theories of capital structure, since, the literature has treated dividend policy and capital structure as two distinct choices, even though there is reason to believe that there are common factors affecting both".

According to Faulkender *et al.* (2006), a key aspect of this theory is that capital structure and dividend policy are jointly determined as part of a continuum of control allocations between managers and investors and, hence, cross-sectional variations in both are driven by the same underlying factors. The endogenously-determined allocation of control between the manager and investors is crucial, not because of agency or private information problems, but because of potentially divergent beliefs that can lead to disagreement about the value of the project available to the company. The key underlying factor is past corporate performance. Better past performance leads to less disagreement, and thus affects the costs and benefits of different control allocations. Capital structure and dividend policy thus

constitute an implicit governance mechanism that determines how much control over the company's real (investment) decisions is exercised by the manager vis a vis the shareholders, and the company's past performance impinges on this governance mechanism.

Faulkender *et al.* (2006) thus present that we are left without a theory of dividends that squares well with these stylized facts. The evidence concerning capital structure is even more troubling, according to them. The two dominant capital structure theories are the (static) Trade-off theory and the Pecking Order theory. The tradeoff theory states that a company's capital structure balances the costs and benefits of debt financing, where the costs include bankruptcy and agency costs, and the benefits include the debt tax shield and reduction of free-cash-flow problems. They are supported in their argument by Jensen (1986), Jensen and Meckling (1976) and Stulz (1990).

A prediction of the theory is that an increase in the stock price, because it lowers the company's leverage ratio, should lead to a debt issuance by the company to bring its capital structure back to its optimum. The Pecking Order theory, according to the work of Myers and Majluf (1984), assumes that managers have private information that investors do not have, and goes on to show that companies will finance new investments, firstly from retained earnings, then from riskless debt, then from risky debt, and finally, but only in extreme circumstances such as financial distress, from equity. This implies that equity issues should be quite rare, particularly when the company is doing well and its stock price is high.

Faulkender *et al.* (2006) point out that empirical evidence is, however, perplexing in the light of these theories. According to Graham and Harvey (2001)s' survey evidence, companies issue equity rather than debt when their stock prices are high. This contention is corroborated by Asquith and Mullins (1986), Marsh (1982), and Mikkelson and Partch (1986). It would appear that the existing theories are under threat. For example, Baker and Wurgler (2002) found out that the level of a company's stock price is a major determinant of which security to issue. In addition, Welch (2004) finds that companies let their capital structures change with their stock prices, rather than issuing securities to counter the mechanical effect of stock returns on capital structure. In contrast, Baker and Wurgler (2002) ascribe their findings to managers attempting to time the market. Dittmar and Thakor (2005) demonstrate theoretically and empirically that companies may issue equity when their stock prices are high, even when managers are not attempting to exploit market mispricing. This contention is also shared by Schultz (2003), with empirical evidence.

Fama and French (2005) provided direct evidence against the Pecking Order hypothesis and concluded that this hypothesis cannot explain capital structure choices. They found that equity issues are not as infrequent as the pecking order hypothesis predicts, and that between 1973 and 2002 the annual equity decisions of more than half the companies in their sample violated the Pecking Order. These empirical studies of dividend policy and capital structure raise the question: why do companies work with lower leverage and dividend payout ratios when their stock prices are high?

Franc-Dabrowska (2009), in trying to answer the question "*Does Dividend Policy Follow the Capital Structure Theory?*", posits that decisions concerning the most optimal choice of financing sources and dividend policy are some of the most difficult financial decisions. In his paper, where he tried to identify the relationships between two capital structure theories (hierarchy theory and substitution theory) and dividend payment policies in Polish stock companies in the agricultural and foodstuff sector, he arrived at a positive relationship. He concluded that company management limits dividend payment according to the hierarchy theory and prefers internal sources of financing economic activities. He again found that most Polish joint stock companies in the agricultural and foodstuff industry did make a decision about not paying dividends, preferring to set aside the achieved profit for injecting equity capital. Also, he found a strong statistical relationship between the amount of paid dividends and the value of equity capital. This confirms the assumption of an interrelationship between theories of capital structure and dividend policies, indicating at the same time the dominance of the hierarchy theory and the smaller practical importance of the substitution theory (from the point of view of decisions to pay dividends).

Investing shareholders and companies have the common goal of increasing wealth. Shareholders can only make money from stocks in two ways, either from dividend payments or from selling their shares to other investors. The trading of stock to other shareholders is natural to the business — it does not make or lose money from the trade. A shareholder will sell stock if the price drops or if she thinks the price will drop. Poor financial health, perceived fiscal failing, and the possibility of reduced dividends are all reasons for stock prices to fall (Tebogo, 2008)

Of the two ways that shareholders make money from stocks, dividend payments have a greater potential to increase the company's funds. This is because increased dividends may cause shareholders to purchase more stock from the business rather than trading the stocks on the market. The connection between capital structure and dividend policy becomes more

complex because increasing dividends reduces the amount of cash financing the company's financial structure. A company's financial manager probably will not risk raising dividend payments unless he expects the company to be able to raise more in stock sales than was spent in dividends (Murekefu and Ouma, 2009)

According to Dhanani (2005), the primary goal of most corporations is to maximize shareholder value to keep up an inflow of investment money. Paying dividends may temporally appease shareholders, but the spending could decrease the amount of cash available for operating and capital expenditures. This means that corporate financial managers must attempt to strike a balance between capital structure and dividend policy. Spending on increased dividends has the potential to both increase and decrease the amount of funding in the company's financial structure (Baker *et al.*, 2001)

Regarding the relationship between dividend and cash holdings, Grossman and Hart (1980), Easterbrook (1984), and Jensen (1986) suggest that dividends may help reduce the agency problem by reducing the amount of cash that management have at their disposal. Thus, investors may react positively to dividend initiations because executives have less cash to waste. An increase in the dividend payout is considered to be good news, as the firm is demonstrating that it not only has positive cash flows, but that these cash flows are increasing enough to justify a higher payout to shareholders. The firm "proves" its cash flow by paying out some of that cash to its shareholders. Higher dividends may signal permanent higher earnings for the firm.

The famous classic study by Miller and Modigliani (1961) proved that the dividend policy and the firm value are irrelevant. On the other hand, the notable study by Jensen (1986) argued that when firms have larger amounts of surplus cash, payout is an effective way to reduce the agency costs between corporate managers and shareholders. According to this suggestion, the evaluation of the corporate payout would depend on the state of the firm.

Further, Pinkowitz *et al.* (2006) suggested that in countries where investor protection is weak, payout was more highly valued than cash accumulation. Faulkender and Wang (2006) argued that cash holdings were valued more in firms that repurchased their own shares than in firms that implemented dividend payouts. Moreover, Harford *et al.* (2008) discussed how, for firms under appropriate corporate governance, high cash holdings were positively related to dividends. Finally, Al-Najjar and Belghitar (2011) concluded that after their empirical analyses, the linkage between cash holdings and dividends was unclear.

John (1993) recognised that leverage plays a significant role in shaping firms' cash policies and found that there is a negative relation between leverage and cash holdings. That is to say, firms can use borrowing as a substitute for cash holdings. Baskin (1987) suggested that firms with high leverage ratios have a higher cost of funds and hold less cash because of the higher costs of leverage. Kim *et al.* (1998) and Ferreira and Vilela (2004) demonstrated a reduction in cash levels when firms increase their financial leverage, which is a negative relationship.

Opler *et al.* (1999) found evidence that cash holdings are negatively correlated to debt, which means that high cash levels are associated with low debt. Graham and Harvey (2001) suggest in their survey study that firms can maintain financial flexibility through having large cash reserves and unused debt capacity (low leverage), implying a negative relationship between firms' cash reserves and leverage. These results are also confirmed by Ozkan and Ozkan (2004). Focusing on leverage and cash reserves, Guney *et al.* (2007) argue that the relationship between cash reserves and leverage can be non-monotonic, implying that the marginal effect of increased leverage depends on the current level. That is to say, with high levels of leverage firms are more likely to face financial distress and thus accumulate larger cash holdings in order to minimize the risk of costly bankruptcy and financial distress.

On the other hand, it has been advocated that lower cash assets create the need to reduce the probability of costly default by lowering the leverage, which means a positive relationship. Williamson (1988) and Shleifer and Vishny (1992) argue that more cash assets increase optimal leverage. Specifically, Williamson (1988) documents that those assets that are more liquid, or more redeployable, should be financed with debt more often, because banks and public debt markets incur lower costs from financing these assets. With a similar idea, Shleifer and Vishny (1992) predicted the relation between asset liquidity and capital structure, arguing that asset liquidity affects the expected costs of distress because less liquid assets sell at higher discounts relative to their fair values. Harris and Raviv (1991) argued that as asset liquidity increases the costs of default drop, and investors are more likely to use debt to obtain information about the firm.

As has been argued by Ferreira and Vilela (2004), the relationship of cash holdings with leverage can have two possible forms. Firstly, because more levered firms want to reduce the risk of financial distress, as the cost of amortization plans of debt is likely to put a burden on firm's treasury, they could hold high quantities of cash. On the other hand, because

the leverage ratio is a proxy for the credit status of a firm or its ability to issue debt, higher leverage can be associated to lower cash holdings. However, as suggested by D'Mello *et al.* (2008), cash holdings could be endogenous to leverage. The argument is that, because the determinants of cash are so closely related to the determinants of leverage, it is interesting to assess whether they are two sides of the same coin. A similar discussion was developed by Acharya *et al.* (2007), who suggested that cash could be negative a debt.

Caldeira and Loncan (2013) found evidence that leverage and cash holdings are negatively related at the margin. Higher levels of cash balances are associated with less leverage, and more levered firms are likely to hold less cash. Their finding was in line with the findings of Acharya *et al.* (2007) and D'Mello *et al.* (2008), and can also be interpreted in light of the Pecking Order theory, as firms would prefer to finance investments with retained earnings (encompassed by cash holdings), referring to debt as a second option to finance investments when they run short of cash. Hence, it makes sense for those higher levels of cash to be associated with less debt ratios, and vice-versa.

Caldeira and Loncan (2013) also found evidence that higher levels of leverage end up constraining firms to issuing more debt, as the gross cash generated that is committed to repay debt, once it reaches a given threshold, causes debt to fall at the margin. In their estimation, if they considered that small and risky firms are more likely to be financially constrained, as past research and theory suggest, they found indirect evidence that more constrained firms hold more cash.

In terms of motivation, the first paper (Capital structure trends) was motivated by the fact that there is a growing need for African countries to wean themselves from the Breton Woods Institutions, but the only way out is for indigenous African firms to lead the way by increasing the pace of manufacturing. This has many implications for gross domestic product growth, employment creation, expansion of government revenue through taxation, retention of foreign exchange through a reduction in the import of consumer goods, and general expansion of the economy. These can only be achieved when these firms are positioned to

increase productivity and investments, which is possible when enough capital is available to the firms. Capital has been found to be the single most important factor in firm growth in Africa (Abor, 2008). It is therefore important that firms avail themselves of the information about, and knowledge of, capital structure issues. However, lack of research in this area, coupled with very little research into R&D by African firms, has made it difficult for firms to have the necessary information. This study therefore provides that information about the determinants of capital structure at both the firm level and the country level to help firms in their capital structure decisions. The study was also motivated by trends in the effects of shocks and risks at specific times. Therefore, the growth and performance of firms in African countries would be made known to investors and also provide a thorough understanding of how country and firm factors influence capital structure (leverage) decisions in African countries. Since most countries in Africa aim at attracting direct foreign investment and also at encouraging investors to invest in firms in Africa, the trends will provide complete evidence about the direction for potential investors and new competitors, to enable them to make conclusive decisions to invest in Africa. There was also the need for a single study with wider application across Africa, and this study, covering several African countries, provides this, to enable investors to make informed decisions regarding investments in these countries.

The paper contributes to the literature in various ways: it covers a longer time period of 18 years, and 14 selected African countries, which enables a conclusive statement to be drawn from the findings about the trends in capital structure in Africa. Another important contribution is that larger numbers of firms have been considered which makes the sample more representative. Most papers consider only firm specific factors, but this study considers both firm and country specific factors, which broadens the limited scope of research previously conducted into capital structure. This study could be used as a stepping stone for future research, to help in understanding, or explaining in detail, how the country specific factors contribute to leverage as countries continue to develop. It would also be useful for indicating how firms can make efficient financial decisions.

The second paper (corporate cash holdings) was motivated by the fact that there was a need for better understanding of the concept of cash holdings the African context, especially considering the fact that not much work has been done in this area compared to Western economies and the emerging economies of Asia. Therefore, the benefit of holding cash in firms' operations is lacking. Again, because the study focused on the trends in cash holdings due to the temporary effects of shocks and risks at a specific time period, it will provide the

necessary information for managers and investors regarding how solid and liquid the firms are in Africa countries, in terms of undertaking profitable projects at any point in time. This will benefit the firms and shareholders and give a more detailed understanding of the magnitude of country and firm factors' impact on corporate cash holding. The trends will further provide direction and encourage firms and regulators of African countries to make decisions regarding cash holdings when the observed factors are considered in the firms' operations and management. It will enable investors to evaluate the performance of the firms and make well informed decisions when investing in Africa countries, knowing that the firms are better positioned in their operations to avoid an unexpected financial burden. Additionally, because firms in African countries faced high constraints and high costs in accessing capital, there was a need to provide information about firms and an insight into cash holding policies to avoid unexpected losses and the risk of turning down worthwhile investments. It is therefore believed that the results of this study will shed light on the factors influencing corporate cash holdings, which will be beneficial to corporate managers and will also serve as a basis for research into corporate cash holding.

This paper contributes to the literature in the following ways: (1) It considers panel data from 14 African countries over an 18 year period, which, as far as is known, is the first time research looking at cash holdings in Africa that has been conducted. (2) It also provides an understanding of how listed non-financial firms in these selected African countries manage their cash holdings. (3) Additionally, it contributes to the literature by investigating the determinants of cash holdings in these selected Africa countries. Finally, (4) it combines both country and firm specific factors analysis with dynamic panel data estimates, which, as far as is known, has not occurred in previous research papers about Africa. This paper will also serve as the impetus for a much wider interest in cash holdings in Africa and the basis for theory formation regarding firms in Africa.

The third and final paper, which is about dividend policy, was motivated by the fact that most of the research about corporate dividends has been in advanced countries. With the exception of a few studies into corporate dividend payment in individual countries, such as Egypt, Ghana, Nigeria and South Africa, there has not been a single study of dividend payouts decisions in several African countries, also detailing the trends across a time period. This study therefore attempts to look at the issue of corporate dividend policy decisions across 14 African countries. As the study also looks at the temporary effects (trends) of risks and shocks at specific times, it will therefore provide information for investors regarding the

performance of firms in African countries over a period of time, and give a comprehensive understanding of how macro and micro factors impact on dividend policy decisions. The trends, will again, provide a clear direction for potential investors, and new entrants as well, and will go a long way towards encouraging firms and regulators in the individual countries to make decisions about dividend policies, especially when the relationships between the observed variables are taken into consideration. Furthermore, since most African countries have put in place measures to attract direct foreign investment and also encourage investors to invest in existing firms across Africa, this study will serve as basis for research into corporate dividend payout in the African context, which will enable investors to make informed decisions regarding their investments across Africa.

The contributions of this paper are that it covers a longer time period (18 years), and includes 14 African countries, which the researcher believes to be the first analysis of its kind. From the findings, it will therefore provide a conclusive statement regarding the trends in dividend payout. Another important contribution is that the larger number of firms included in the study makes the sample more representative. A further contribution of the study is that it takes into consideration country specific factors in addition to the firm factors, which broadens the limited scope of previously conducted research into dividend payout in individual countries. This study could be used as a stepping stone for future research to help in understanding, or explaining in detail, how the country specific factors contribute to dividend payout as countries continue to develop.

1.4 Structure of this Thesis

This thesis is structured into three separate segments. A chapter is dedicated to each of the three issues related to capital usage and distribution, in terms of determinants of capital structure, dividend policy and corporate cash holdings in African countries. However, what is common to these three separate lines of research is their emphasis on the impact, on finance of firms and economic growth in African countries.

Chapter II describes the data, sources, definitions and distributional properties of the variables in the thesis. The chapter also provides the research methodology considered for all the three separate chapters (capital structure, cash holdings and dividend policy).

Chapter III comprises an analysis of trends in capital structure (leverage), the relationship between leverage, profitability, target pay-out, non-debt tax shield, firm size, investment opportunities, banking development, economic development, and governance of

the firms selected in Africa, using a panel dataset of 608 non-financial listed firms. The chapter measures the relationship between leverage (capital structure), firm and country specific factors and empirically tests whether firm and country level factors affect capital structure. The chapter demonstrates robust support for the relationship between leverage, firm and country level factors and pecking order and trade-off theories. It also provides evidence of low and stable trends in leverage.

Chapter IV examines the trends and analyses whether country level factors (rule of law, gross domestic product and domestic credit of banks) affect corporate cash holdings. The results provide evidence in support of previous studies, that corporate cash holdings are significantly determined by leverage, net working capital, capital expenditure and return on asset. Firms with leverage tend to hold less cash. Firms with capital expenditure, net working capital and return on asset hold large amounts of cash. The results of the coefficients suggests that both the trade-off and pecking order theory are applicable in explaining firm factors, but are more supportive of the pecking order. Firm factors explain differentials in cash holdings, but country factors do not impact significantly, after controlling for firm specific factors and trends are stable.

Chapter V of this thesis examines differentials in firm and country specific factors for payers and non-payers of dividends policy. Secondly, it examines the predictors concerning the amount of dividends paid by listed non-financial firms in African countries. The research found that dividend payers are more profitable, have larger firm size, greater investment, high retention of earnings and less financial leverage than non-paying firms. The results also show that in countries where gross domestic product is low, firms are likely to pay dividends, and that the corruption level is high for non-payers of dividends. The conclusion, therefore, indicates that, although firm specific factors are important in Africa in determining dividend policy regarding payout, country specific factors, such as corruption and the GDP per capita, play very significant roles. The results support the results of previous studies.

Chapter VI captures the general conclusions of this thesis by outlining and providing the policy implications of the chapters. The chapter also considers the essential limitations of the current thesis, and also recommends areas for future research.

Chapter 2: **Data and Research Methodology**

2.1 Data and sources

2.1.1 Data

The study uses firm and country level panel (1994-2011) data of listed non-financial firms in African countries. The firms were obtained from African stock markets (online sources) and Datastream. Firms with a registered International Securities Identifying Number (ISIN) and codes were selected. The ISIN code is a unique international code which identifies the security in which a firm trades. Firms without ISIN codes were eliminated, since their data would be difficult to collect from a database, and also to make sure the firms listed in Africa were identified and recognised by the international community, which also provided credibility for the existence of the firms. Financial firms, insurance and utilities were excluded, as their financial decisions and rules undertaken are affected by different factors than listed non-financial firms. This is supported by Gonzalez and Gonzalez (2012) and Wiwattanakantang (1999). To avoid double counting of firms, the firms were grouped into their headquarters (African and foreign countries) and the countries in which they operate. Only the latter group was considered. Firms with similar ISIN codes and similar names were eliminated. Sample firms were selected from 14 African countries. These countries were: Botswana, Cote D'Ivoire, Egypt, Ghana, Kenya, Morocco, Namibia, Nigeria, South Africa, Tanzania, Tunisia, Uganda, Zambia, and Zimbabwe throughout the eighteen year period, 1994-2011. These countries were selected because of data availability covering the study period and the fact that the countries were a mixture of middle and low income countries, high and low populations, war and non-war countries, to provide a general and comprehensive understanding of how firms operate regarding their capital structure, cash holding and dividend policy, and the fact that, because they are African countries, their environment is different from developed countries. The final sample for the study contained 608 firms with data periods of 18 years, which provided 10944 firm year observations based on the selection criteria.

Table 2.1 Total number of firms in each country

Country	No of firms	Data periods (1994-2011)	No. of Observation
Botswana	19	18	342
Cote D'Ivoire	29	18	522
Egypt	91	18	1638
Ghana	24	18	432
Kenya	42	18	756
Morocco	61	18	1098
Namibia	27	18	486
Nigeria	117	18	2106
South Africa	129	18	2322
Tanzania	3	18	54
Tunisia	30	18	540
Uganda	8	18	144
Zambia	14	18	252
Zimbabwe	14	18	252
Total	**608**		**10944**

An excel file showing firm's name, ISIN, start date, sources and country was constructed, which facilitated the collection of the data.

2.1.2 Sources

Using a template with ISIN codes, the firm level data was retrieved from the Bloomberg database as the main source of data extraction for firm factors from their balance sheet, income statement and cash flows from 1989 to 2011, but the period 1994 to 2011 was selected because of data availability. The defining parameters in the template for data download from Bloomberg were the firm's ISIN, the Bloomberg start year of the data (1989), the currency used (U.S. dollars, in millions), and the Bloomberg field (Mnemonic) and description. Yearly data was used.

The country level factors consisted of macroeconomic and governance data. The macroeconomic, data including gross domestic product, gross domestic product per capital and domestic credit provided by the banking sector, was extracted from the World Bank (2012) World Development Indicators. Governance data, including rule of law, control of corruption and political stability was extracted from the World Bank website (Worldwide Governance Indicators, 2012) over the period 1996-2011. 1994 and 1995 were not considered for governance factors because of the unavailability of data. Yearly data was used and was US dollars. These were necessary for accessing the governance indicators and the

development indicators of the various countries in order to access their impact on capital structure, corporate cash holdings and dividend policy in Africa.

2.1.3 Variables and definitions

Table 2.2 Paper One variables and definitions: Capital structure

Paper one of the thesis considers the capital structure trends and the choice of the variables and proxies were guided by previous studies. The dependent variable Leverage (LEV) and independent variables used in this study followed Fama and French (2002), with some modifications. Leverage as used in this study was defined as total debt to total assets

Variables	Label	Definition
Dependent variable:		
Leverage	Lev	Total debt divided by total assets
Independent variables:		
Investment opportunity	Inv. opp.	Market value of assets divided by the total assets
Profitability	Prof	Earnings before interest and tax divided by total assets
Firm Size	Size	Natural logarithm of assets
Non-debt tax shield	NDTS	Depreciation expenses divided by total assets
Target payout	Tag. payt	Dividend divided by earnings per share
Gross domestic product (real GDP)	GDPcons	Gross domestic product at constant price (in real terms), measuring economic development
Domestic credit of banks to GDP	DCB%GDP	Domestic credit provided by banking sector as a percentage of GDP (measure banking development)
Rule of law	RoL	Perception of extent of confidence and law abiding in society, quality of contract enforcement, courts, property rights, crime and others
Corruption	Cor	Perception of the extent to which public power is exercised for private gain and others

Table 2.3 Paper Two variables and definitions: Corporate cash holding

Paper Two of the thesis looked at corporate cash holdings. The selection of the variables used in this study was guided by the literature. The dependent and independent variables were defined so as to be consistent with those of Bates *et al.* (2009). The dependent variable cash holding was, defined as cash and marketable securities divided by total assets.

Variables	Label	Definitions
Dependent variable:		
Cash holding (Cash ratio)	CASHR	Cash and marketable securities divided by total assets
Independent variables:		
Financial leverage	LEV	Total debt divided by total assets (proxy for financial distress)
Market-to-book ratio	MKTBR	Market value of equity divided by total assets (measure for investment opportunities)
Cash flow	CF	Earnings before interest, taxes, depreciation and amortization divided by total assets (proxy for internal source of finance)
Net working capital	NWC	Working capital less cash and marketable securities divided by total assets (proxy for liquid asset)
Capital expenditure	CE	Capital expenditure divided by total assets (proxy for investment or demand for cash)
Firm size	SIZE	Natural logarithm of total assets
Dividend payout	DIV	Dividend payout divided by total equity
Return on assets	ROA	Net income divided by total assets (proxy for profitability)
Rule of law	ROL	Perception of the extent of confidence and law abiding in society, quality of contract enforcement, courts, property rights, crime and others.)
Gross domestic product (real GDP)	GDPC	Gross domestic product at constant price (for measuring economic development)
Domestic credit of banks to GDP	DCB%GDP	Domestic credit of banks as a percentage of GDP

Table 2.4 Paper Three variables and definitions: Dividend policy

Paper three is concerned with dividend policy across African countries. The selection of the variables used in this study was guided by the literature. The dependent variable was dividend policy (DPY3), defined as dividend per share to total assets.

Variables	Label	Definition
Dependent variable:		
Dividend policy	DPY3	Dividend per share divided by total assets
Independent variables:		
Profitability	PROF	Earnings before tax and interest divided by total assets
Financial leverage	FLEV	Total debt divided by total assets
Investment opportunity	INV	Total market value of equity divided by total assets
Firm size	SIZE	Natural logarithm of assets
Corruption	COR	Perception of the extent to which public power is exercised for private gain and others
GDP per capita (log)	lnGDPperca	Log of gross domestic product per capita

Country level factors: (Macroeconomic and Governance)

Gross domestic product (real GDP) is the gross domestic product at purchaser's prices, and is the sum of the gross value added by all resident producers in the economy, plus any product taxes and minus any subsidies not included in the value of the products. Data was in constant 2000 U.S. dollars. Gross domestic product per capita (real GDP) is gross domestic product divided by midyear population. GDP is the sum of the gross value added by all resident producers in the economy, plus any product taxes and minus any subsidies not included in the value of the product. Domestic credit provided by the banking sector (percentage of GDP) includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net as a percentage of GDP. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data is available (including institutions that do not accept transferable deposits, but incur such liabilities as time savings deposits). Real values were considered, to take into account inflation (that is adjustment for price changes). GDP per capita and the domestic credit of banks as a percentage of GDP are measures for economic growth and banking development respectively (Levine and Zervos, 1998). Macroeconomic variables were in real values. The

real values were considered because they are normally distributed. (See appendix B for details on variable definitions from data source).

From the World Bank (2012) Worldwide governance indicators database, Rule of law is an index that reflects the perception of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract of enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Corruption is an index that reflects the perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests. The composite estimates of governance indicators' rule of law and corruption are in units of a standard normal distribution, with a mean of zero, a standard deviation of one and ranges from approximately -2.5 (weak) to 2.5 (strong), with high values corresponding to better governance performance. The indication is that countries with positive or higher values show higher regard for the rule of law and have strong control over corruption. (See appendix C for details on variable definitions from data source)

2.2 Distributional **properties** for variables

Table 2.5 Distributional properties for all selected variables

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistic
Firm factors:						
Leverage	0.17	0.12	0.18	0.00	3.27	1.29 x 10^5
Investment opp.	1.54	1.01	9.35	-0.46	491.27	1.03 x 10^9
Profitability	0.10	0.10	0.25	-13.69	1.37	6.67 x 10^8
Firm size	4.97	4.88	2.10	-3.37	22.69	5.29 x 10^2
Target payout	10.84	0.37	771.16	-100	58823	8.20 x 10^9
Non-debt tax shield	0.11	0.03	5.40	0.00	392.17	6.04 x 10^9
Cash ratio	0.12	0.08	0.13	0.00	1.00	1.91 x 10^4
Market-to-book ratio	1.54	1.01	9.36	-0.46	491.27	1.03 x 10^9
Cash flow	0.14	0.15	0.27	-13.68	1.39	5.11 x 10^8
Net working capital	676049.2	10.21	54.2	-4363.06	$4.35*10^9$	1.11 x 10^10
Capital expenditure	0.07	-0.05	0.08	-3.15	0.01	2.41 x 10^7
Dividend payout	1506.38	0.33	64474.8	-25.89	3363630	1.21 x 10^9
Returns on assets	0.06	0.07	0.27	-11.02	2.26	1.78 x 10^8
Dividend policy	0.04	0.01	1.57	0.00	90.95	1.47 x 10^9
Country factors:						
Real GDP	70.80	53.10	56.80	2.82	193.00	9.21 x 10^2
Domestic credit of Banks to GDP	53.56	36.09	46.08	3.09	161.98	1.83 x 10^3
Corruption	-0.38	-0.39	0.64	-1.36	1.25	4.19 x 10^2
Rule of law	-0.43	-0.12	0.63	-1.82	0.67	7.38 x 10^2
GDP per capita (log)	6.98	7.19	0.90	5.32	8.37	1.05 x 10^3

NB: Jarque-Bera test statistic was rounded in 3 significant figures.

The table above shows the distributional properties of all the variables used in the thesis. For ease of reading, gross domestic product (Real GDP) and net working capital are reported in billions and millions respectively. It provides the mean, median, standard deviation, minimum, maximum, and Jarque_Bera test statistic. The mean and median values of the leverage were 0.17 and 0.12, respectively. The standard deviation was 0.18, with a minimum and maximum of 0.00 and 3.27 respectively. The mean and median values of investment opportunities were 1.54 and 1.01, respectively, with a variation of 9.35 and minimum and maximum of -0.46 and 491.27 respectively. Profitability had a mean and median value of 0.10 and 0.10, with a standard deviation of 0.25 and minimum and maximum of -13.69 and 1.37 respectively.

Firm size had a mean and median of 4.97 and 4.88 respectively and a variation of 2.10, with a minimum and maximum of -3.37 and 22.69 respectively. The mean and median values of the target payout were 10.84 and 0.37, respectively, with a standard deviation of 771.16. The minimum and maximum were -100 and 58823 respectively. The non-debt tax shield had a mean and median value of 0.11 and 0.03 respectively, with a standard deviation of 5.40. The minimum and maximum were 0.00 and 392.17 respectively. Cash ratio had a mean of 0.12 and a median of 0.08, with a standard deviation of 0.13. The minimum and maximum values were 0.00 and 1.00 respectively. The market to book ratio had a mean of 1.54 and a median of 1.01 with a standard deviation of 9.36. The minimum value was -0.46 and it had a maximum of 491.27. Cash flow had a mean value of 0.14 and a median of 0.15, with a standard deviation of 0.27. The minimum and maximum values were -13.68 and 1.39. The net working capital had a mean of 676069.20 and a median of 10.21, with a standard deviation of 54.20. The minimum and maximum values were -4363.06 and $4.35*10^9$ respectively. The mean and median values of capital expenditure were 0.07 and -0.05, with a standard deviation of 0.08. The minimum and maximum values were -3.15 and 0.01 respectively. Dividend payout had a mean of 1506.38 and a median of 0.33, with a standard deviation of 64474. The minimum and maximum values were -25.89 and 33630 respectively. Return on assets had a mean of 0.06 and median of 0.07, with a standard deviation of 0.27. The minimum and maximum were -11.02 and 2.26 respectively. Dividend policy had a mean of 0.04 and a median of 0.01, with a standard deviation of 1.57. The minimum and maximum values were 0.00 and 90.95 respectively. The gross domestic product (Real GDP) had a mean value of 70.80 and a median value of 53.10 and a variation of 56.80, with minimum and maximum values of 2.82 and 193.00 respectively. Domestic credit of banks to GDP had a mean value of 53.56 and a median value of 36.09, with a standard deviation of 46.08. Minimum and maximum values were 3.09 and 161.98 respectively. Corruption index showed a mean value of -0.38 and median value of -0.39, with a standard deviation of 0.68. The minimum and maximum values were -1.36 and 1.25 respectively. The mean and median values of rule of law were -0.43 and -0.12 respectively, with a standard deviation of 0.63. The minimum and maximum values were -1.82 and 0.67 respectively. Gross domestic product per capita, measured as the log of GDP per capita, had a mean value of 6.98 and a median of value of 7.19, with a standard deviation of 0.90. The minimum and maximum values were 5.32 and 8.37 respectively. As the results indicate from the Jarque_Bera test statistic (JB), the variables in the dataset are not normally distributed and therefore the hypothesis of normal distribution is rejected at 5% level of significance, with a critical value of 5.99 at 2 degrees of

freedom. The Jarque-Bera test statistic results for variables in each country show non-normality, with the exception of Tanzania, with the JB test of some variables less than the critical value of 5.99. For each individual country's specific distributional properties of variables, see Appendix D for details).

2.3 Research Methodology

This section considers the methods applied throughout the thesis for examining the determinants of the capital structure, cash holdings and dividend policy of firms in African countries. A significant body of study, for example studies by Mankiw *et al.* (1992) and Barro and Sala-i-Martin (2003), have investigated some of these relationships using cross-sectional data. Such studies have averaged the dependent and the independent variables over a suitably long period, which is meant to capture the steady state relationship between the variables concerned. Cross-sectional estimation methods may capture the long-run relationship between the variables of interest. However, they do not take advantage of the time series variations in the data, which potentially could increase the efficiency of the estimation. In this study, the basic empirical strategy was to predict the dependent variables of firms using a dynamic panel data estimation technique, because of its ability to overcome problems such as omitted variable bias due to heterogeneity as well as endogeneity. The estimating equations were formulated below:

Fixed Effect

(A) Firm fixed-effect

$$y_{it} = \sum_{j=1}^{J} \mu_j D_j + \sum_{t=1}^{T} \beta_t \mu_t + \boldsymbol{X'_{it}\delta} + \boldsymbol{Z'_{it}\phi} + \epsilon_{it} \cdots\cdots\cdots (1)$$

$$\text{where } \mathrm{D_j} = \begin{cases} 1 \text{ if firm is j} \\ 0 \text{ otherwise} \end{cases}$$

$$\mu_\mathrm{t} = \begin{cases} 1 \text{ if year is t} \\ 0 \text{ otherwise} \end{cases}$$

(B) Country fixed-effect

$$y_{it} = \sum_{l=1}^{L} \gamma_l N_l + \sum_{t=1}^{T} \beta_t \mu_t + \boldsymbol{X'_{it}\delta} + \boldsymbol{Z'_{it}\phi} + \tau_{it} \cdots\cdots\cdots (2)$$

$$\text{where } \mathrm{N_l} = \begin{cases} 1 \text{ if country is l} \\ 0 \text{ otherwise} \end{cases}$$

$$\mu_t = \begin{cases} 1 \text{ if year is t} \\ 0 \text{ otherwise} \end{cases}$$

General Method of Moment (GMM)

$$y_{it} = \alpha + \delta y_{it-1} + \boldsymbol{X'_{it}\delta} + \boldsymbol{Z'_{it}\phi} + \varepsilon_{it} \cdots\cdots\cdots (3)$$

Where:

y_{it} = Dependent variable for the firm i at the time t.

X'_{it} = Vector of explanatory variables for the firm level factors

Z'_{it} = Vector of explanatory variables for country level factors

δy_{it-1} = Lag of the dependent variable

α = Constant

D_j = Firm dummies

μ_t = Time dummies

$\epsilon_{it}, \tau_{it}, \varepsilon_{it}$ = Error terms

The models above were estimated using two econometric methods: Firstly, panel data fixed effect and secondly, general method of moment (GMM). Firstly, equation (1) was estimated using firm fixed effect, secondly, equation (2) was estimated using country fixed effect and thirdly, equation (3) was estimated using GMM, by combining both firm and country level factors.

The evaluation of the formula for the technique used was based on the fact that, accounting for only the firm factors, the estimated R-Squared statistics show that the model explains only 2% of the within group variability, 1% of the between group variability and 2% of the overall variability. Accounting for only the country level factors, the estimated R-Squared statistics show that the model explains only 2% of the within group variability and less than 1% of the between group and overall variability. However, when both the firm and country level variables are included in the model, the estimated R-Squared statistics show that the model explains 10% of the within group variability, 4% of the between group and the overall variability. Although the estimated R-Squared statistics are not very high, there is evidence to suggest that the general method moment (GMM) model, with both the firm and country level

factors including the lag of the dependent variable, fits the data better than the separate models.

The completed final models for each of the papers are shown below.

Paper One: Capital structure (Leverage is the dependent variable**)**

$$LEV_{it} = \beta_0 + \beta_1(Lev)_{it-1} + \beta_2(Inv.opp)_{it} + \beta_3(Prof)_{it} + \beta_4(NDTSO1)_{it} + \beta_5(Size)_{it} + \beta_6(TargPayout)_{it} + \beta_7(GDPcons)_{jt} + \beta_8(DcBGDP)_{jt} + \beta_9(RoL)_{jt} + \beta_{10}(Cor)_{jt} + \varepsilon_{it} \quad (2)$$

Paper Two: Corporate cash holding (Cash holding is the dependent variable)

$$CASHR_{it} = \beta_0 + \beta_1(CASHR)_{it-1} + \beta_2(LEV)_{it} + \beta_3(MKTBR)_{it} + \beta_4(CF)_{it} + \beta_5(NWC)_{it} + \beta_6(CE)_{it} + \beta_7(SIZE)_{it} + \beta_8(DIV)_{it} + \beta_9(ROA)_{it} + \beta_{10}(GDPcons)_{jt} + \beta_{11}(DCBGDP)_{jt} + \beta_{12}(RoL)_{jt} + \varepsilon_{it} \quad (3)$$

Paper Three: Corporate dividend policy (Dividend policy is the dependent variable)

$$DPY3_{it} = \beta_0 + \beta_1(DPY3)_{it-1} + \beta_2(PROF)_{it} + \beta_4(INV)_{it} + \beta_3(FLEV)_{it} + \beta_4(SIZE)_{it} + \beta_6(COR)_{jt} + \beta_7(InGDPpercap)_{jt} + \varepsilon_{it} \quad (4)$$

Where:

LEV_{it}	Leverage ratio (total debt/total assets) for firm i at time t
Lev_{it-1}	The lagged leverage of firm i at time t
$Inv.opp_{it}$	Investment opportunities (market value of assets/ total assets) for firm i at time t
$Prof_{it}$	Profitability (EBIT / total assets) for firm i at time t
$NDTSO1_{it}$	Non-debt tax shield (Depreciation expenses / total assets) for firm i at time t
$Size_{it}$	Size of the firm (logarithm of total assets) for firm i at time t
$TargPayout_{it}$	Target payout (Dividend per share /earnings per share) for firm i at time t
$CASHR_{it}$	Cash holding (cash and marketable securities /total assets) for firm i at time t
$CASHR_{it-1}$	Lagged of cash holding of firm i at time t
$MKTBR_{it}$	Market to book ratio (market value of equity / total assets) for firm i at time t
CF_{it}	Cash flow (EBITDA / total assets) for firm i at time t
NWC_{it}	Networking capital (working capital - cash and marketable securities/total assets) for firm i at time t
CE_{it}	Capital expenditure (capital expenditure/total assets) for firm i at time t
DIV_{it}	Dividend payout (dividend payout / total equity) for firm i at time t
ROA_{it}	Return on asset (net income/total assets) for firm i at time t
$DPY3_{it}$	Dividend policy (dividend per share /total assets) for firm i at time t
$DPY3_{it-1}$	Lagged of leverage of firm i at time t
$GDPcons_{jt}$	Gross domestic product at constant price for country j at time t
$DcBGDP_{jt}$	Domestic credit provided by banking sector as a percentage of GDP for country j at time t

RoL_{jt}	Rule of law for country j at time t
Cor_{jt}	Corruption for country j at time t
$InGDPpercap_{jt}$	Log of gross domestic product per capita for country j at time t
ε_{it}	The error term

2.3.1 Estimator Choice

In the estimations, two methods were employed, which were the fixed effects and the general method of moment (GMM), but with different dependent and independent variables. The first model examined the impact of firm level factors on the dependent variable, whilst the second model examined the impact of country level factors. The third model combined firm and country level factors, and the last model used the GMM by combining firm and country level factors. All the models are estimated using the fixed effects estimator as the benchmark, which was done to control for unobserved heterogeneity across firms. The fixed effect estimations were also adopted to take into account the individuality of each firm specific effect or cross-sectional unit included in the sample, by allowing the intercept to vary for each firm, while assuming that the slope coefficients were constant across firms. The reason for this was that the panel data incorporated observations on the same cross sectional unit over several time periods, meaning that it is more likely that there would be cross sectional effects on each firm, or a set of firms, so using fixed effects would address the issue. However, the fixed effect was flawed, due to the endogeneity of the variables in the model (Gupta *et al.*, 2005). The OLS estimator was upward biased and inconsistent, due to the dynamic structure of the model, since the lag of the dependent variable was correlated with the error term. However, the fixed effect estimator transformed the models by substracting the out the time series means of each variable for each firm, and had the advantage of wiping out firm (country) specific effects that were time invariant. However, the coefficients were likely to be downward biased, as Nickell (1981) has shown that for finite *T*, the fixed effect estimator is biased and inconsistent. To address this problem, Anderson and Hsiao (1981) proposed the first difference transformation of the the model and the use of the past level of the dependent variable as an instrument for the first difference. This instrumental variable technique leads to consistent, but not necessarily efficient, estimates, because it does not use all the available moment condition (Baltagi, 1995). Therefore in this study, the general method of moment (GMM) technique, developed for the dynamic panel data using both the Differenced-GMM estimator by (Arellano and Bond, 1991), was considerd. The Arellano and Bond (Differenced-GMM) estimator estimates the difference equations, which gets rid of the

time invariant effects, and extends the Anderson-Hsiao idea considering also the lagged past values.

The Arellano-Bond estimator (Differenced-GMM) uses all the possible lagged values of the predetermined variables as valid instruments, and it obtains more efficient and consistent (asymptotically) estimates than the Anderson-Hsiao IV estimator.

In summary, the GMM was adopted to solve the problems of: (1) the presence of unobserved firm effects, and (2) the autoregressive process in the data (Gonzalez and Gonzalez, 2012). GMM also provides robust estimates, since it eliminates firms' non-observable individual effects and controls endogeneity issues, as the lagged values are used as instruments. GMM eliminates the issue of possible correlation between the lags of the dependent variable and the error term, given the orthogonal conditions between the lagged variables and the error term. It has the ability to overcome problems such as omitted variable bias due to heterogeneity as well as endogeneity. Two tests suggested by Arellano and Bond (1991) were also used. The first was the Sargan and Hansen test of over-identifying restrictions.

In the regression, a formal test was conducted on the first three models using the Wooldridge test for autocorrelation to check whether the results were free from serial correlation. The test suggested that serial correlation was an issue and, therefore, it was necessary to consider the GMM, as suggested by Arellano and Bond (1991) to further enhance the efficiency and robustness of the results. The Sargan and Hansen tests for overidentifying restrictions proved that second order autocorelation was not an issue and overidentifying restrictions were satisfied. The null hypothesis of no serial correlation could, therefore, not be rejected.

Chapter 3: **Capital structure trends in selected Africa countries**

ABSTRACT

This chapter explains the empirical analysis of the capital structure trends for listed non-financial firms in African countries. Using a panel dataset of 608 firms from 14 African countries over the period 1994-2011 and employing Fama and French (2002)s' approach with modifications, the study measures the relationship between leverage, and firm and country specific factors. The study found a positive relationship between leverage, investment opportunities, non-debt tax shield, firm size, the domestic credit of banks, and the rule of law. However, a negative relationship was reported between leverage, profitability, target payout, corruption, and gross domestic product. The study found that lagged leverage, investment opportunities, profitability, firm size, domestic credit of banks, gross domestic product, corruption and the rule of law were significant in determining the capital structure of firms in the selected African countries. The study also found that the leverage trends across the countries under examination were very low and stable. The conclusion, therefore, indicates that, although firm specific factors are important in Africa in determining leverage, country specific factors, such as the institutional environment and governance, play a very significant role in determining the level of leverage. The signs of these relationships suggest that pecking order and trade-off theories of capital structure models derived from the developed countries provide help in explaining financial behaviour of firms in the selected African countries.

3.1 Introduction

Capital structure is necessary for the growth of firms and economic development. Capital structure has been defined as the mix of securities and financing sources used by firms to finance real investment (Myers, 2001). Ever since the 'irrelevance' propositions by Modigliani and Miller (1958), interest in studies about capital structure has grown, with many divergent views reported about the relationships between the characteristics of firms, such as profitability, tangibility, size, investment opportunities, the non-debt tax shield, target payout, and size as determinants of leverage.

Leverage has also been defined by Ward and Price (2006) as the proportion of capital which is financed by debt rather than equity. With the assertion made by Modigliani and Miller (1958), many studies have reported strong relationships between leverage and other firm characteristics. Compared to the developed world, very little research has been done on African countries about the capital structure of firms except, for example, studies by Abor (2008), Salawu and Agboola (2008), Ramlall (2009), Amidu (2007), Dawood *et al.* (2011), Olayinka (2011), and Buferna *et al.* (2005). Even these few studies have mainly concentrated on determinants of the capital structure of firms in specific individual countries.

The objective of this study is to examine the capital structure trends in Africa, with consideration of both firms' and country specific variables, and it discusses and examines the determinants of capital structure in 13 selected Africa countries. Country specific factors, such as the development of banking, economic development and the governance of a country, are employed to examine and understand their impact on firm corporate financing behaviour across the selected countries in Africa, as well as considering the firm specific factors, such as investment opportunities, profitability, the non-debt tax shield, firm size and target payout. Both the firm and country specific factors were used to identify the extent to which these relationships confirm, or reject, the predictions of the pecking order and the trade-off theories and their impact on leverage in the selected African countries.

This study is motivated by the fact that there is a growing need for African countries to wean themselves from the Breton Woods Institutions, but the only way out is for indigenous African firms to lead the way by increasing the pace of manufacturing. This has many implications for gross domestic product growth, employment creation, expansion of government revenue through taxation, retention of foreign exchange through the reduction in import of consumer goods, and general expansion of the economy. These can only be

achieved when these firms are positioned well to increase productivity and investments, which is possible when enough capital is available to the firms. Capital has been found to be the single most important factor in firm growth in Africa (Abor, 2008). It is therefore important that firms avail themselves of the information and knowledge of capital issues. However, lack of research in this area, coupled with very little research in R&D among African firms, has made it difficult for firms to have the needed information. This study therefore provides that information about the determinants of capital structure at both the firm level and the country level to help firms in their capital structure decisions. The study is also motivated by trends' effects of shocks and risks at specific times. Therefore, the growth and performance of firms in African countries would be made known to investors and also provide a thorough understanding of how country and firm factors influence capital structure (leverage) decisions in African countries. Since most countries in Africa aim at attracting direct foreign investment and also reassuring investors to invest in firms in Africa, the trends will provide complete evidence about the direction for potential investors and new competitors, to enable them make conclusive decisions to invest in Africa. There is also the need for a single study with wider application across Africa, and this study, covering several African countries, provides that to enable investors to make informed decisions regarding investments in these countries.

The contributions of this study are that it covers a longer time period of 18 years, and 13 selected African countries, which enables a conclusive statement to be drawn from the findings about the trends in capital structure in Africa. Another important contribution is that larger numbers of firms have been considered which makes the sample more representative. Most papers consider only firm specifics factors, but this study considers both firm and country specific factors, which broadens the limited scope of research previously conducted into capital structure. This study could be used as a stepping stone for future research to help in understanding or explaining in detail how the country specific factors contribute to leverage as countries continue to develop, and also for efficient financing decisions of firms.

The paper has been organized into six sections. Section one introduces the area of research. This is followed by a review of the literature in sections two and three. Section four describes the methodology, followed by a discussion of the results in section five. The conclusions of the paper are presented in section six.

3.2 Theories and definition of capital structure

Capital structure has been defined as the mix of securities and financing sources used by firms to finance real investment (Myers, 2001). Actual mention has been made of debt and equity Abor (2008) and other intermediate securities (Brounen *et al.*, 2006) as sources of finance.

It was in 1958, when Modigliani and Miller (1958) presented a paper on the irrelevance of capital structure, that researchers became motivated to investigate it. The interest is on-going, but, with the passage of time, new ideas have been added to the question of the relevance, or irrelevance, of capital structure. Modigliani and Miller (1958) stated that in a world of frictionless capital markets, capital structure would not be necessary (Schwartz and Aronson, 1967). This theory later became known as the "Theory of Irrelevance'.

Modigliani and Miller (1958)s' argument was that no capital structure mix is better than another. Modigliani and Miller (1958)s', Proposition-II attempted to solve the problem which occurs when an increase in the debt ratio also leads to an increased rate of return. They stated that the expected rate of increase in return generated by debt financing is exactly offset by the risk incurred, regardless of the financing composition chosen.

Following Modigliani and Miller (1958)s' assumptions, two theories have been suggested to explain capital structure as being very relevant to a firm's value. These theories are the Pecking Order theory and the Trade-off theory. The Pecking Order Theory and the Trade-off theory followed Miller (1977)'s seminal paper. The Pecking Order theory (Myers, 1984) gave a structured way of considering financing instruments. Pecking Order theory takes into consideration the results of the debt equity of firms. It stated that firms will explore all financial sources at their disposal, but in the end will select the lowest source first (Myers, 1984). It therefore recommended that a project be undertaken based on the following methodologies: by using internal equity, followed by the use of debt and, lastly, by using external equity (Titman and Wessels, 1988).

The major distinction is that equity has two categories, namely, internal equity and external equity. Internal equity is that which is readily available for investment, whereas external equity is that which must be obtained from outside sources.

3.2.1 Trade-off theory

The Trade-off theory of capital structure indicates that the decision of a company to choose how much debt and equity financing that is required is based on the balancing of the costs and benefits of each form of funding (Gurcharan, 2010). According to Gurcharan (2010), there is an advantage to finance through debt (interest tax shield benefit) but this needs to include consideration of the costs of financial distress, including the bankruptcy costs of debt and non-bankruptcy costs. Therefore, the empirical relevance of the trade-off theory is still been questioned (Frank and Goyal, 2003). On the other hand, Miller (1977) and Graham (2003) argue that the tax savings obtained do appear large enough and certain, while the deadweight bankruptcy costs seem minor.

The Trade-off theory suggests that firms having huge intangible assets must use equity financing in their business, and firms with tangible assets should seriously consider debt financing (Milton and Raviv, 1990). It is evident that the merits and demerits of offering excessive debt are significant. Trade-off theory acknowledges the tax advantages of debt, whilst also considering the threat of bankruptcy associated with it. The Agency Cost theory Jensen and Meckling (1976), cited in Chakraborty (2010) proposes that the optimal capital structure is determined by agency costs, which include the costs for both debt and equity issues. The costs related to equity issues may include (a) the monitoring expenses of the shareholders, (b) the bonding expenses of the managers, and (c) 'residual loss' due to the divergence of managers' decisions from those of the shareholders Jensen and Meckling (1976), cited in (Chakraborty, 2010). On the other hand, according to this theory, debt issue increases the shareholders' and managers' incentives to invest in high-risk projects that yield high returns to the shareholders, but increase the likelihood of failure that the bond holders will have to share if it is realised. If debt holders anticipate this, a high premium would be charged, which, in turn, would increase the cost of the debt. Thus both equity and debt incur agency costs, and hence the optimal capital structure involves a trade-off between these two types of cost.

3.2.2 Pecking Order theory

Frank and Goyal (2003) describe the Pecking Order theory of capital structure as one of the most influential theories of corporate leverage. The theory maintains that due to adverse selection, firms prefer internal to external finance (Myers, 1984).When outside funds are necessary, firms prefer debt to equity because of lower information costs associated with debt issues. This presents a structured way of considering financing instruments. The Pecking

Order theory (Myers, 1984) gives a structured way of considering financing instruments. It recomends that a project be undertaken based on the following methodologies: by using internal equity, followed by the use of debt and, lastly, by using external equity (Titman and Wessels, 1988). Equity is rarely issued (Frank and Goyal, 2003).

Frank and Goyal (2003) tested the Pecking Order theory in the period between 1971 and 1998. They found that, on average income within the business is not adequate to finance any investment, that external sources of funding are highly regarded, and, therefore, debt and equity are important sources of funding. On the issue of determinants of capital structure, Bancel and Mittoo (2004) intimated that large firms do not take bankruptcy costs into much consideration, whilst high-growth firms consider common stock to be the lowest source of funds and use windows of opportunity to issue common stock.

Chen (2004) found that in the Chinese economy short-term finance is more considered and, therefore, less attention is paid to long term debt. A paper by Rao *et al.* (2007) also stated that neither the Trade-off model nor the Pecking Order hypothesis, both based in Western settings, considered the capital structure options of Chinese firms. This could also be true for the present study of firms in Africa, which may be due to the fact that the African financial market is in a developmental stage and, unlike Western countries, there are the issues of an undeveloped financial market, lack of funding, high cost of debts, and the inexperience of firm managers of the dealings within the financial market.

A study by Hovakimian *et al.* (2004) also found that studies of corporate financing choices showed that the importance of stock returns was unrelated to target leverage, and was likely to be due to the Pecking Order theory. The study by Rao *et al.* (2007) also found that profitability has no effect on target leverage. According to them, unprofitable firms issue equity to offset the excess leverage due to accumulated losses. Thus, their study supported the notion that firms have a target capital structure. However, preference for internal financing and the temptation to time the market by selling new equity when the share price is relatively high interfere with the tendency to maintain the firm's debt ratio close to its target (Rao *et al.*, 2007).

3.3 Determinants of capital structure: and hypotheses development

3.3.1 Leverage

Leverage has been defined by Ward and Price (2006) as the proportion of capital which is financed by debt rather than equity. They maintained that the higher the leverage, the higher the amount of debt in the capital structure of a firm. Also, Firer *et al.* (2004) stated that capital structure refers to the relative amount of debt and equity a firm utilizes to finance its operations. Muradoglu and Sivaprasad (2007) advocated for low leverage as the best financial policy for firms. They explain that low leverage is able to mitigate agency problems and at the same time preserve financial flexibility. According to them, profitable firms may want to keep low leverages so as to prevent a higher proportion of profit being used for interest payment. They were however also concerned with the school of thought that maintain that firms in their attempt to keep leverage levels low, avoid taking on profitable opportunities and investments, hence throwing away their firm value (Muradoglu and Sivaprasad, 2007). Nonetheless, Muradoğlu and Sivaprasad (2012) maintain that investing in low-leverage and low-market-to-book-ratio firms yields abnormal returns to the firms.
It has been noted by Long and Malitze (1985) and Frank and Goyal (2009) that leverage is limited to firms with a high proportion of intangible assets. However, if a firm's investments are primarily made up of tangible assets, such as capital equipment, that firm can support higher leverage. They concluded that the type of investment opportunities facing the firm determines its financial leverage.

3.3.2 Leverage and investment opportunities

The relationship between leverage and investment opportunities has been a contentious subject matter for many finance scholars (Ahn *et al.*, 2006). Ahn *et al.* (2006) indicated that leverage and investment were unrelated in the original Modigliani and Miller (1958) propositions. In the Modigliani and Miller (1958) propositions, if a firm had profitable investment opportunities, it could obtain funding for these opportunities, regardless of the nature of its current balance sheet.

Subsequently, however, capital structure literature has argued that leverage and investment opportunities are strongly related. Ahn *et al.* (2006) concluded that within diversified firms, the negative impact of leverage on investment is significantly greater for high q than for low q segments, and significantly greater for non-core than for core segments. This is consistent with the view that diversified firms allocate a disproportionate share of

their debt service burden to their higher q and non-core segments. They also found that among low growth firms, the positive relation between leverage and firm value is significantly weaker in diversified firms than in focused firms. Myers (1977), for example, demonstrates that with sufficiently high leverage, positive net present value (NPV) projects can go unfunded, due to the 'debt overhang' created by prior debt financing. Jensen (1986) and Stulz (1990) also predict a negative relation between leverage and investment, but emphasize that this can be beneficial to shareholders of low growth firms because debt limits managerial discretion over free cash flows. Yuan and Kazuyuki (2011) also found that the total debt ratio (bank loan ratio) does have a negative impact on fixed investment by companies, an indication that the effect of debt on fixed investment exists for Chinese listed companies as well. They again found that companies with a higher Tobin's Q and a larger cash flow make larger amounts of investment, and also that the total debt ratio (bank loan ratio) has a stronger negative impact on investment by low-growth companies than on that by high-growth companies. Their analysis suggests that, in China, the total debt ratio (bank loan ratio) works as a factor that restrains excessive fixed investment by companies. It was also found that the restraining effect of the bank loan ratio on over-investment was larger than that of the total debt ratio. These results are consistent with those relating to U.S. companies from Lang *et al.* (1996), as well as the results about Japanese companies from Arikawa *et al.* (2003). Based on the above empirical evidence, the paper hypothesized that:

Hypothesis 1: Firms' in the selected African countries leverage is positively associated with the investment opportunities.

3.3.3 Leverage and profitability

Due to the relative importance of profitability to firm growth and survival, this issue has been examined thoroughly, both empirically and theoretically. The major theoretical developments in profitability analysis include the establishment of a link between market structure and profitability (Akinlo and Asaolu, 2012). Akinlo and Asaolu (2012) added that in the earlier stages of theory development, inter-industry differences in profitability were, or could, be explained in terms of a single element of market structure i.e. concentration. However, over the years, the literature has identified several other factors as determinants of profitability, including firm growth, capital intensity, advertisement intensity, the age of the firm, and business cycle trends, amongst others.

The relationship between leverage and profitability has extensively been established in many empirical studies. However, the findings from these studies are mixed. Some studies found positive relationships between leverage and profitability, while others identified a negative relationship. A few others found no relationship at all between the two. Studies by Robb and Robinson (2010), Ruland and Zhou (2005) believe that there is a positive relationship between leverage and profitability. According to Jensen (1986), profitable firms signal quality by leveraging up, resulting in a positive relation between leverage and profitability. This agrees with Modigliani and Miller (1963). Robb and Robinson (2010) found that gains from leverage are quite significant, and the use of debt enhances the firm's market value. They argued that financial leverage has a positive effect on the firm's return on equity, provided the earning powers of the firm's assets are greater than the average interest cost of debt to the firm.

A research paper by Chandrakumarmangalam and Govindasamy (2010) found that leverage is positively related to profitability, and that shareholders' wealth is maximized when firms are able to employ more debt. Also, Abor (2005) reported a significantly positive relationship between total debt, total assets and profitability, measured as return on equity. In the same way, a firm's debts' level and value is positively related when shareholders have total control over the firm's business, and it is negatively related when debt holders have the power to influence the course of the business (Berkovitch and Israel, 1996).

Hence, the impact of debt on a firm's value is a function of the balance of power within the firm. In a situation where debt holders have more power, a negative leverage would be obtained. However, the reverse is the case where shareholders have more power (Akinlo and Asaolu, 2012). The use of high levels of debt in the capital structure leads to a decrease or increase in the return on shareholders' capital (return on owner's equity).

Other studies, however, contrast with the above findings. Some studies have found negative relationships between leverage and profitability (Myers, 2001; Negash, 2001; Phillips and Sipahioglu, 2004). Negash (2001) found that debt had a negative impact on the profitability of firms quoted on the Johannesburg Stock Exchange. He argued that the potential gains from leverage over an infinite period were significant, and comparable to what has been reported in studies from developed countries, in support of the Modigliani and Miller (1963) theory. However, the actual gains were not as implied by the 1963 theory, as the effective tax rate for most firms in South Africa were lower than the statutory rate.

Titman and Wessels (1988) observed that highly profitable firms have lower levels of leverage than less profitable firm, because they first use their earnings before seeking external capital. Moreover, stock prices reflect how the firm performs. Some other studies, including Sheel (1994), Sunder and Myers (1999) and Wald (1999), have corroborated these findings. For example, Wald (1999) found that profitability has a negative effect on debt to asset ratios in a heteroskedatic Tobit regression model. Sheel (1994) reported a negative relationship between the debt to asset ratio and the non-debt tax shield, and between a firm's leverage behaviour and its past profitability. Fama and French (1998) reported that debt does not concede tax benefits. Other studies that reported negative relationships between leverage and profitability include Myers (1984), Michaelas *et al.* (1999), Cassar and Holmes (2003), and Gedajlovic *et al.* (2003). The negative findings are in line with the Pecking Order theory. Consequently, with the above evidence, the study therefore hypothesizes that:

Hypothesis 2: There is a negative relationship between the profitability and leverage of firms across the selected African countries

3.3.4 Leverage and firm size

Abor (2008), citing Castanias (1983), Titman and Wessels (1988), and Wald (1999), emphasized the size of a firm as a determinant of a firm's capital structure. The general assertion has been that larger firms are more diversified, and hence have lower variance of earnings, making them able to tolerate high debt ratios. Smaller firms, on the other hand, may find it relatively more costly to resolve information asymmetries with lenders, and thus, may present lower debt ratios (Castanias, 1983). Lenders to larger firms are more likely to get repaid than lenders to smaller firms, thus reducing the agency costs associated with debt. Therefore, larger firms will have higher debts. Abor (2008) found that size of the firm has a significantly positive relationship to the short-term debt ratio of SMEs. Size is also significantly and positively related to both the long-term and short-term debt ratios of quoted firms. Also, Kayo and Kimura (2011) found a positive and significant relationship between size and leverage. Psillaki and Daskalakis (2009), analysing data from France, Greece and Portugal, found a positive relationship between size and leverage. Nor *et al.* (2011) also found a significant positive relationship between size and target leverage in Thailand firms and Singapore firms, but none in Malaysian firms. Accordingly, the next hypothesis is proposed:

Hypothesis 3: The selected African countries' leverage is positively related to the firm size

3.3.5 The non-debt tax Shield

Hossain and Ali (2012) identified another type of expenses that has the power of generating a tax shield similar to interest expenses, namely, depreciation expenses, which, according to Hossain and Ali (2012), can be considered as tax deductible expenses. Therefore, some of the literature, such as that by Wiwattanakantang (1999) and Ozkan (2001), found an inverse relationship between non-debt tax shields and debt. But, contrary to the results of above studies, Graham and Harvey (2001) and AL-Shubiri (2010) found a positive relationship between the non-debt tax shield and leverage. Hence, this study has tried to discover whether the non-debt tax shield affects leverage. Following Ozkan (2001), the ratio of depreciation over total assets has been used as a measure of the non-debt tax shield. The trade-off predicts a negative relationship between the non-debt tax shield and leverage. Based on the theoretical and empirical results, this study therefore hypothesizes that:

Hypothesis 4: The leverage of firms of the selected African countries is negatively related to the non-debt tax shield

3.3.6 Target payout

Ahmad *et al.* (2011) were concerned about the apparent neglect of dividend policy in empirical studies when determining capital structure. There are, however, several studies that have looked at the relationship between target payout and leverage. For instance, Ahmad *et al.* (2011) found a negative relationship between the two. They concluded that when target payout increases, the leverage level decreases. However, Beattie *et al.* (2006) and Frank and Goyal (2004) indicated that dividend payment by firms decreases the level of internal funds, resulting in an increase in demand for external financing. This, according to them, results in a positive relationship between leverage and target payout. The Pecking Order theory supports the positive relationship, but strongly disagrees when the firm has sufficient internal funds. Based on the literature, the study hypothesizes that:

Hypothesis 5: Firms in the selected African countries have a positive relationship between target payout and leverage.

Country specific variables

In addition to firm specific factors and their relationship with leverage, many studies have also been concerned with how country specific factors have also influenced leverage. Findings have been varied for all types of economies - developed, emerging and developing.

Fan *et al.* (2008) found that a firm's capital structure is affected by the strength of a country's legal system and public governance. They maintained that there is a correlation between weaker laws and more government corruption, and higher corporate debt ratios and shorter debt maturity. This assertion had been made earlier by Demirgüç-Kunt and Maksimovic (1999).

3.3.7 Country governance factors (rule of law and corruption)

Studies into the relationship between, and influence of, a country's corporate governance on firm leverage have been undertaken by de Jong *et al.* (2008) and Deesomsak *et al.* (2004). Their findings have established that corporate governance has a positive influence on the corporate financing of firms in a country. La Porta *et al.* (2000), and Demirgüç-Kunt and Maksimovic (1999) have also stated that the firms' stakeholders and the operations of the firm would be affected by the country's governance, such as legal, regulatory and institutional environment. They added when investors are protected by the country's laws, there is willingness on their part to finance firms in that country. This, according to them, will definitely increase a firm's leverage.

Cheng and Shiu (2007) made the assertion that investor protection plays an important role in the determinants of capital structure. Their conclusion was that firms in countries with better creditor protection have higher leverage, while firms in countries where shareholder rights are better protected use more equity funds. Therefore, corporate governance is positively related to a firm's leverage. Other studies have found mixed results in terms of the relationships. For example, Nor *et al.* (2011) found a positive relationship between governance and firm leverage in Malaysia and Singapore, but that a negative relationship existed in Thailand. They affirmed the position taken by de Jong *et al.* (2008), Deesomsak *et al.* (2004) and Cheng and Shiu (2007). In contrast to the positive relationship, they also found strong evidence that firms in countries with weaker shareholder rights, such as Thailand, relative to Malaysia and Singapore, may be forced to use more internally generated funds (Thailand has lower shareholders rights of 2, as against 4 for Malaysia and Singapore (La Porta *et al.*, 2000). This is because external capital is likely to be expensive, thus reducing the leverage of firms in that country (Demirgüç-Kunt and Maksimovic, 1999).

Corruption has been defined by the international community as the abuse of public office for private gain. It has been measured in the form of the Corruption Perception Index by Transparency International, and it reflects the extent to which corruption is perceived to exist amongst public officials and politicians. Over the years most African countries have

been performing badly on the index. The question is how corruption influences leverage**.** Fan *et al.* (2012) used the corruption index and proxies to measure the threat of all, or part, of investor rights being expropriated by managers or public officials. In their estimation, debt is expected to be used relatively more than equity when the public sector is more corrupt, since, according to them, it is easier to expropriate outside equity holders than debt holders. Similarly, they argued that since short-term debt is more difficult to expropriate, it will be used relatively more frequently than long-term debt in more corrupt countries. Their findings, using regression analysis, were that corruption is associated with higher debt ratios.

Fan *et al.* (2008), in a study in China entitled *"Public governance and corporate finance: Evidence from corruption cases,"* found that because of high level corruption among particular firms, their financial leverage, measured by total debt over total assets, was significantly less than that of the unconnected (or matching) firms, subsequent to the arrest of the corrupt bureaucrats. They explained the decline by attributing it to the decrease in long-term debt rather than to the decrease in short-term debt. These 'corrupt/bribing' firms' debt maturities were significantly shortened subsequent to the arrest of the bureaucrats. Fan *et al.* (2008) indicated that being connected with corrupt bureaucrats provides firms with a comparative advantage in obtaining access to debt, and, in particular, long-term debt. However, this debt financing advantage disappears when the connection is broken due to the arrest of the bureaucrat in question. The rule of law and corruption were used to measure the level of governance in the country. Based on the literature, the study derived the hypothesis on the governance indicators, rule of law and corruption that:

Hypothesis 6: Governance factors, such as the rule of law and corruption of the selected African countries affect firms' leverage more and less respectively.

Economic development

For the country specific variable of GDP, papers, for example by Frank and Goyal (2004), Korajczyk and Levy (2003), have used GDP growth in their analysis of aggregate nonfinancial corporate profit growth to proxy the growth opportunities and the overall economic conditions. To them, GDP growth is expected to be positively related to leverage. Gurcharan (2010), in a Review of Optimal Capital Structure Determinant of Selected Asian countries, found that the GDP growth rate variable yields a negative impact on leverage and the coefficients are significant at 1% level. This is in contrast to Booth *et al.* (2001), who found a positive correlation between the real GDP growth rate and the total debt ratio, but a negative one with the long-term market debt ratio in developing countries. Gurcharan also cited Song and Philippatos (2004), who studied the OECD countries and found a negative

relationship. Gurcharan (2010) concluded that his finding is an indication that in countries with relatively higher rates of economic growth, firms are using lower levels of debt to finance new investments. The gross domestic product was used to measure economic development. Based on the empirical research, the study hypothesised that:

Hypothesis 7: There is a negative relationship between the economic development (GDP) and leverage

3.3.8 Banking development

The domestic credit of banks in the private sector refers to financial resources provided to the private sector, such as through loans, purchases of non-equity securities and trade credits, and other accounts receivable that establish a claim for repayment. Frank and Goyal (2004) maintained also that the ratio of domestic credit provided by the banking sector to GDP proxies' funds available in the local market is expected to be positively related to leverage. Jõeveer (2006), using empirical data from Eastern European countries, found that less local credit causes lower leverage levels. Therefore the domestic credit of banks was used to measure the level of banking development. This study therefore hypothesised that:

Hypothesis 8: There is a positive relationship between bank development (GDP) and leverage.

3.4 Empirical findings

Table 3.1 Summary variables and definitions

Variables	Label	Definition
Dependent variable:		
Leverage	Lev	Total debt divided by total assets
Independent variables:		
Investment opportunity	Inv. opp.	Market value of assets divided by the total assets
Profitability	Prof	Earnings before interest and tax divided by total assets
Firm Size	Size	Natural logarithm of assets
Non-debt tax shield	NDTS	Depreciation expenses divided by total assets
Target payout	Tag. Payt	Dividend divided by earnings per share
Gross domestic product (real GDP)	GDPcons	Gross domestic product at constant price (in real terms), measuring economic development
Domestic credit of banks to GDP	DCB%GDP	Domestic credit provided by banking sector as a percentage of GDP (measure banking development)
Rule of law	RoL	Perception of extent of confidence and law abiding in society, quality of contract enforcement, courts, property rights, crime and others
Corruption	Cor	Perception of the extent to which public power is exercised for private gain and others

3.4.1 Descriptive statistics

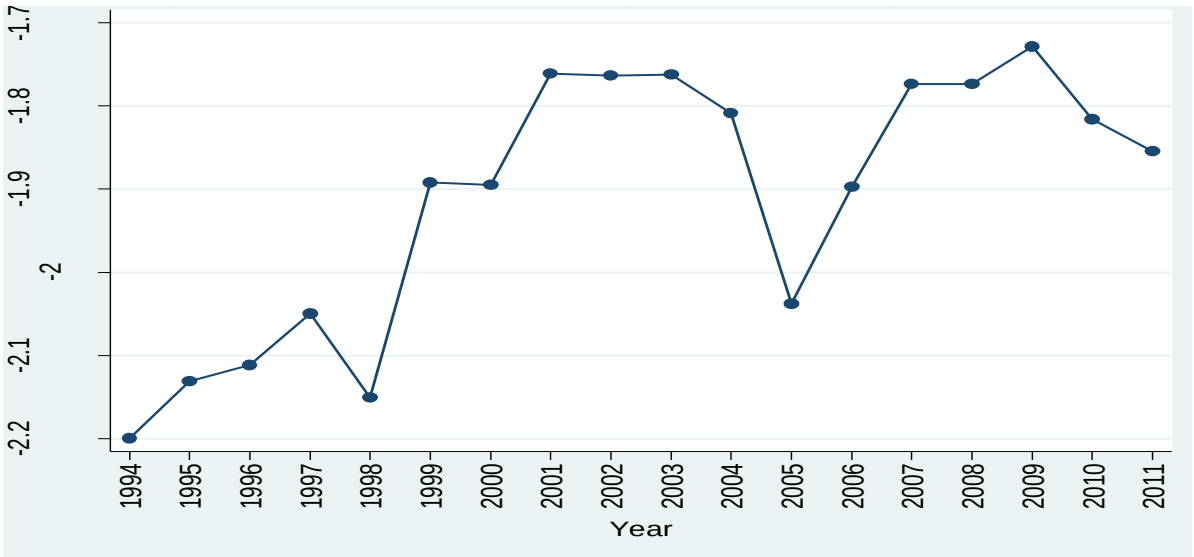
Table 3.2 Summary statistics median trends of variables across firms

This table present median values of capital structure (Leverage) and other firm and country specific factors from 14 selected African countries over the period 1994-2011. The firm specific variables are as follows. Leverage (Lev), which is the dependent variable and is defined as the total debt to total assets. Investment opportunities (Inv. opp) are the ratio of market value of assets to Total assets. Profitability (Prof) is defined as earnings before interest and tax to total assets. Size (Size) is defined as the natural logarithm of total assets. Non-debt tax shield (NDOTSO1) is measured as depreciation expenses to total assets. Target payout (Tag. payt) is defined as dividend to earnings per share. The country specific factors are as follows. Gross domestic product at constant price (GDPcons), used as a proxy for measuring economic development. Domestic credit of banks to GDP (DCB%GDP), used as a measure of banking development. Rule of law (RoL) is a vector for governance. Corruption (Cor) is a vector governance

Year	Lev	Inv.opp	Prof.	Tag.payt	NDTS	Size	GDP.Con	DcB.GDP	Cor	RoL
1994	0.09	1.11	0.12	0.34	0.03	5.38	3.86	27.90	-	-
1995	0.09	1.12	0.12	0.31	0.03	5.32	3.95	32.70	-	-
1996	0.09	1.14	0.12	0.32	0.03	5.04	4.12	31.20	-0.07	-0.01
1997	0.12	1.20	0.10	0.35	0.03	5.18	4.24	39.70	-	-
1998	0.10	0.98	0.11	0.35	0.04	4.85	4.32	43.90	-0.25	-0.03
1999	0.12	0.87	0.10	0.41	0.03	4.68	4.36	47.70	-	-
2000	0.13	0.81	0.09	0.35	0.04	4.77	4.60	51.00	-0.39	-0.01
2001	0.14	0.75	0.10	0.40	0.04	4.66	4.74	44.60	-	-
2002	0.14	0.72	0.09	0.40	0.03	4.67	4.81	43.40	-0.29	-0.01
2003	0.13	0.81	0.09	0.41	0.03	4.72	5.31	42.40	-0.47	-0.05
2004	0.12	0.94	0.10	0.38	0.03	4.68	5.87	42.60	-0.54	-0.02
2005	0.11	1.08	0.10	0.37	0.03	4.65	6.19	46.20	-0.52	-0.12
2006	0.13	1.22	0.11	0.34	0.03	4.77	6.57	48.60	-0.66	-0.22
2007	0.13	1.44	0.10	0.35	0.02	4.88	7.00	45.50	-0.67	-0.20
2008	0.12	1.16	0.11	0.36	0.02	5.02	7.42	42.80	-0.71	-0.09
2009	0.13	1.07	0.08	0.36	0.02	5.03	7.94	38.60	-0.4	-0.09
2010	0.12	1.12	0.09	0.40	0.02	5.09	8.56	33.10	-0.56	-0.11
2011	0.12	0.96	0.09	0.39	0.02	5.27	9.13	31.30	-0.68	-0.42

From Table 3.2 above, the leverage ratios for the firms across the 14 African countries showed an upward trend, with median leverage ranging from 0.09 to 0.13. Observing the formal test of normality, all the leverage ratios showed non-normality in the error term, and hence transformation was performed for the leverage variables. In terms of the firm specifics, Table 3.2 shows that investment opportunities rose, fell and thereafter rose. Profitability indicated downward and upward changes over time. Firm size ranged from 5. 38 to 5.27. The firm size shows a consistent rise from 1994 to 1997, but thereafter falls and rises again. Target payout ranged between 0.31 to 0.39, indicating a general upward trend. The non –debt tax shield also ranged from 0.03 and 0.04. It rose initially from 1994 to 2006 and fell from 2007 to 2012. For the country specific analysis, gross domestic product had a range of 3.86 to 9.13, indicating an upward trend for the firms across these countries under examination. The domestic credit of banks as a percentage of gross domestic products ranged between 27.9 to 48.6 even though it indicated up and downs. The corruption levels ranged between -.07 to .68 for all the firms in the study. This implies that there is a corruption level in Africa since, according to World Bank Data Base, the level of corruption and a rule of law ranges between -2.5 (weak) and 2.5 (strong) indicating that a corruption level of -2.5 shows a high level of corruption and 2.5 shows a low level of corruption, with the higher scores corresponding to better outcomes The rule of law ranged between -.01 to -.42, which implies that the governance practiced in Africa is very low.

Figure 3.1 Trends in median logarithm leverage across firms in the sample

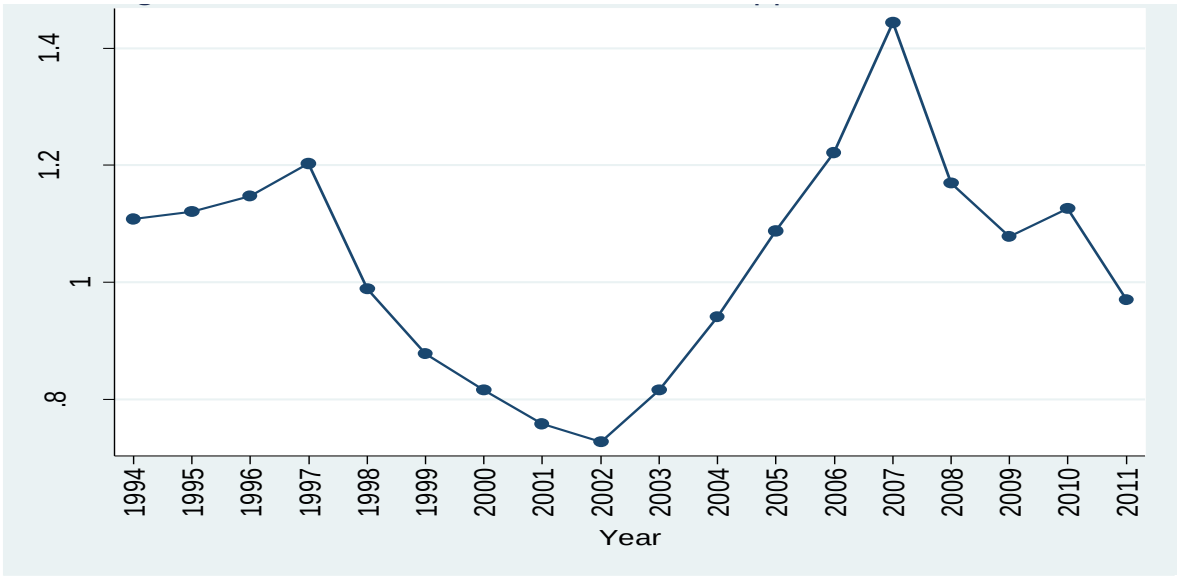


Source: Bloomberg and author's calculation

In Figure 3.1, the trends in the median logarithmic leverage indicated a generally upward trend, albeit with some significant fluctuations. In particular, in the years 1998 and 2005,

there were sharp declines in the median leverage across firms. Some periods also witnessed the median leverage remaining constant. On the whole, periods after 1998 recorded high levels of leverage amongst the firms under consideration.

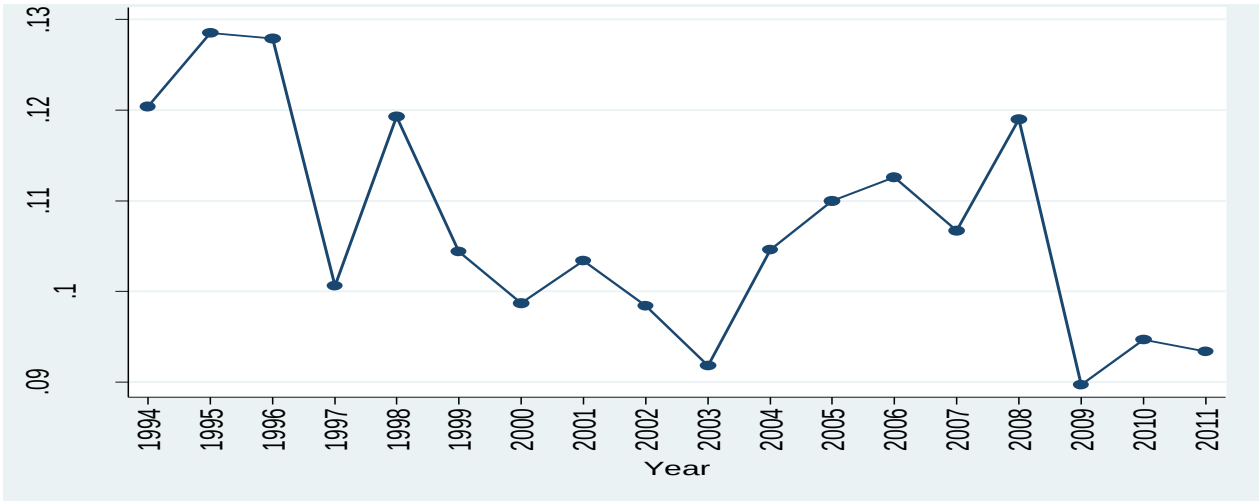
Figure 3.2 Trends in median investment opportunities across firms in the sample



Source: Bloomberg and author's calculation

In Figure 3.2, as far as investment opportunities were concerned, the median trends indicated a long wave of fluctuations. That is to say, a decline in investment opportunities was followed by a consistently long decline, whereas a rise was accompanied by consistently long periods of rise. In general, however, the trends indicated a vacillating posture, as illustrated above.

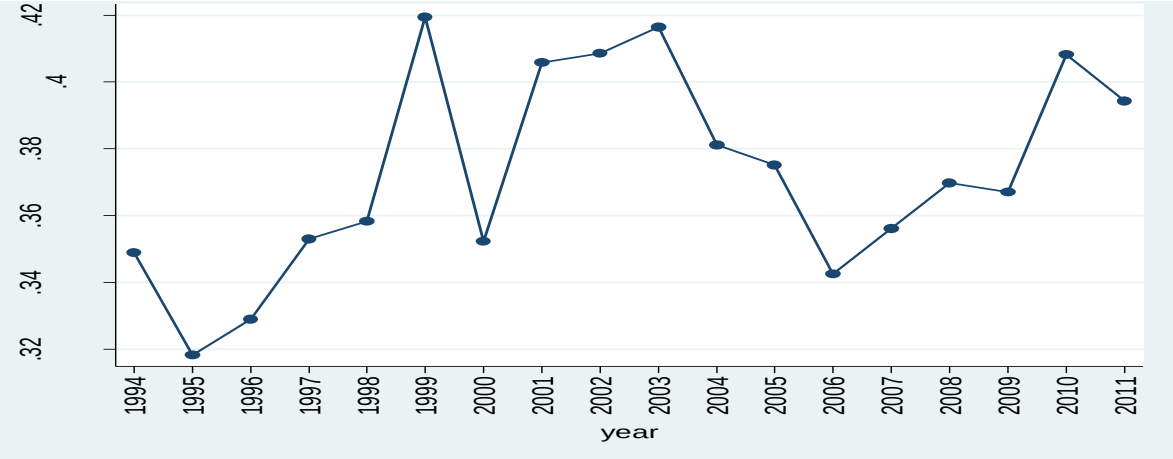
Figure 3.3 Trends in median profitability across firms in the sample



Source: Bloomberg and author's calculation

With Profitability as a component of leverage across firms, the median trends indicated significant downwards and upwards changes over time. There were rapid falls in 1997 and 2009.

Figure 3.4 Trends in the median target payout across firms in the sample



Source: Bloomberg and author's calculation

The trends indicated a generally upward movement with some significant fluctuations. The period between the years 2003 and 2006 witnessed a sharp decline in the median target payout across firms. On a whole, periods following 1999 recorded high levels of target payout amongst the firms under consideration.

Table 3.3 Leverage trends across countries 1994-2011

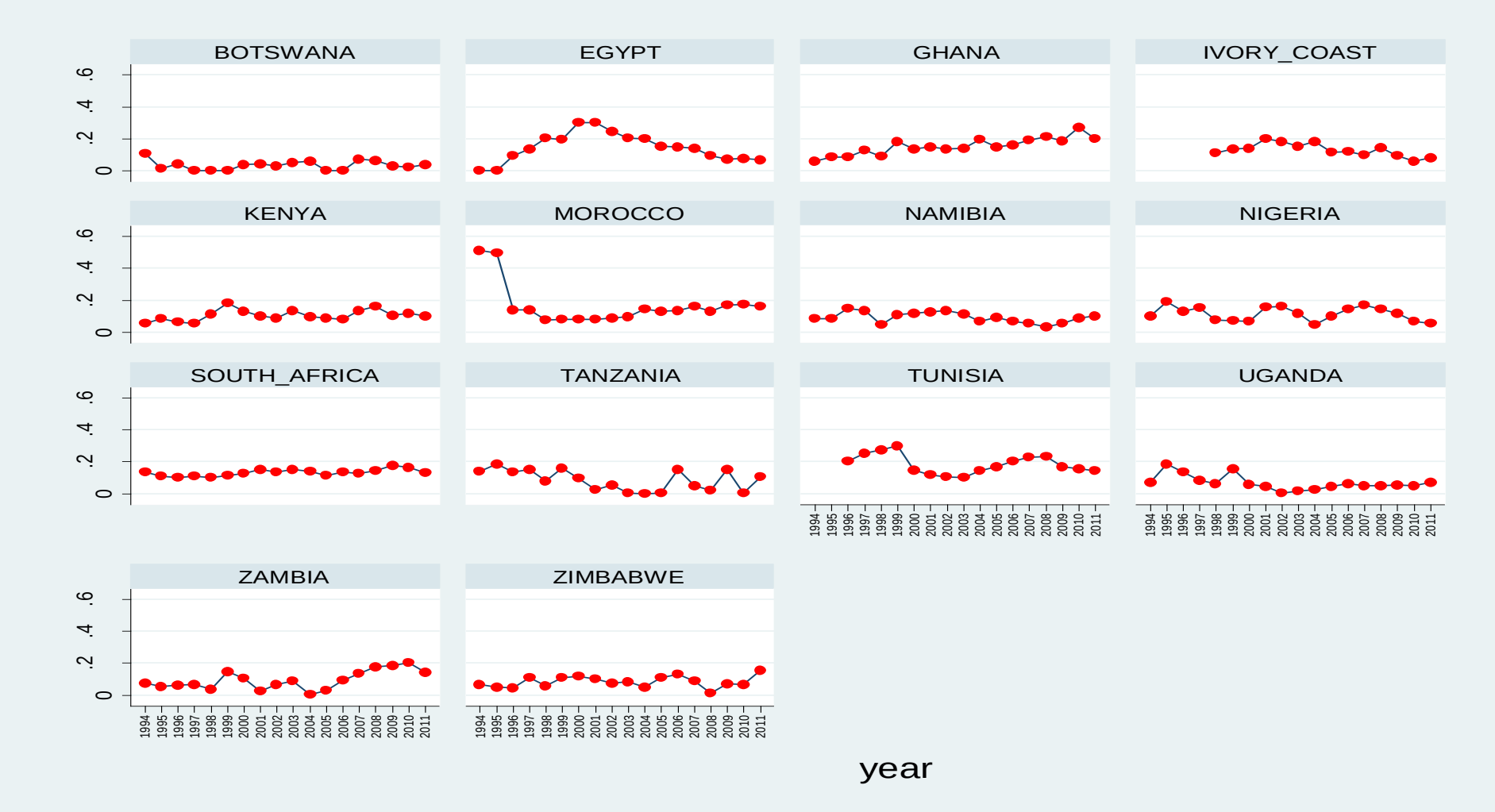
Table 3.3 reports the median leverage trends across the 14 selected African countries under study using data of 1994-2011. Leverage (Lev), which is the dependent variable, is defined as the total debt to total assets. There was a total of 608 firms across all the countries and the data was sourced from DataStream, Bloomberg and International Monetary Fund

Countries	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
BOTSWANA	0.10	0.02	0.04	0.00	0.00	0.01	0.04	0.04	0.03	0.05	0.06	0.01	0.01	0.07	0.06	0.02	0.02	0.04
EGYPT	0.00	0.00	0.09	0.13	0.20	0.19	0.30	0.30	0.24	0.20	0.19	0.15	0.15	0.14	0.09	0.07	0.07	0.06
GHANA	0.06	0.08	0.08	0.12	0.08	0.18	0.14	0.15	0.13	0.14	0.19	0.15	0.16	0.19	0.21	0.18	0.27	0.19
IVORY_COAST	-	-	0.11	0.13	0.14	0.20	0.18	0.15	0.18	-	-	0.11	0.12	0.10	0.14	0.09	0.06	0.08
KENYA	0.05	0.08	0.06	0.05	0.11	0.18	0.13	0.10	0.0	0.13	0.09	0.09	0.08	0.13	0.16	0.10	0.11	0.10
MOROCCO	0.51	0.49	0.13	0.13	0.07	0.08	0.07	0.08	0.08	0.09	0.14	0.13	0.13	0.16	0.13	0.16	0.17	0.16
NAMIBIA	0.08	0.08	0.14	0.13	0.04	0.10	0.11	0.12	0.13	0.11	0.07	0.09	0.06	0.05	0.03	0.05	0.09	0.10
NIGERIA	0.10	0.19	0.13	0.15	0.07	0.07	0.06	0.15	0.16	0.11	0.04	0.10	0.14	0.16	0.14	0.11	0.06	0.05
SOUTH_AFRICA	0.13	0.11	0.09	0.10	0.10	0.11	0.12	0.15	0.13	0.15	0.13	0.11	0.13	0.12	0.14	0.17	0.16	0.12
TANZANIA	0.13	0.18	0.13	0.15	0.08	0.16	0.09	0.02	0.05	0.01	0.00	0.01	0.15	0.04	0.02	0.15	0.01	0.10
TUNISIA	-	0.20	0.25	0.27	0.29	0.14	0.11	0.10	0.101	0.14	-	0.16	0.20	0.22	0.23	0.16	0.15	0.14
UGANDA	0.07	0.18	0.13	0.08	0.06	0.15	0.05	0.04	0.01	0.02	0.02	0.04	0.06	0.05	0.05	0.05	0.04	0.07
ZAMBIA	0.07	0.05	0.06	0.06	0.03	0.14	0.10	0.02	0.06	0.08	0.01	0.03	0.09	0.13	0.17	0.18	0.20	0.14
ZIMBABWE	0.06	0.05	0.05	0.10	0.06	0.11	0.12	0.10	0.07	0.08	0.05	0.10	0.12	0.08	0.01	0.07	0.06	0.15

Source: Bloomberg, and author's calculation

From Table 3.3 above, the leverage ratios for the 14 selected African countries are relatively very low and stable across all the countries between 1994 to 2012. The Botswana leverage ranges between 0 to 0.10, Egypt between 0 to 0.30, Ghana between 0 to 0.27, while Ivory Coast is between 0 to 0.20. The Kenya leverage ratio is between 0 to 0.18. Morocco has a leverage ratio ranging between 0 to 0.51, Nigeria between 0 to 0.19, South Africa 0 to 0.17, Tanzania between 0 to 0.18, Tunisia between 0 to 0.29, Uganda between 0 to 0.15, Zambia between 0 to 0.20 and Zimbabwe between 0 to 0.15.

Figure 3.5 Trends in median leverage across countries in the sample (1994 - 2011)



Source: Bloomberg and author's calculation

In Figure 3.5 above, the trends in the median leverage across all the countries indicated a range of between 0 and 0.6 in the selected African countries. The leverage trend of the individual countries showed the following: Botswana ranging between 0 and 0.2, Egypt between 0 and 0.2, Ghana 0 and 0.2, Ivory Coast had leverage between 0 and 0.2. The Kenyan leverage was between 0 and 0.2 but was very high in the years 1999 and 2008.

Morocco, between 1994-1995, recorded the highest leverage ratio, ranging between 0.4 and 0.6, but it had been stable for the remaining years between 0 and 0.2. Nigeria's leverage was between 0 and 0.2, South Africa ranging between 0 and .02, Tanzania and Zambia both had leverage between 0 and 0.2 and had a very cyclical leverage across all years. Tunisia recorded leverage between 0 and .04. Uganda's leverage ranged between 0 and 0.2 but was cyclical up to 2001. Zambia also had leverage between 0 and 0.2 and became stable throughout the remainder of the years. Zimbabwe had leverage between 0 and 0.2 and was very slow and stable.

The leverage ratio was between 0 and 0.2 for Kenya, South Africa, Nigeria, the Ivory Coast, Zambia and Tanzania, whilst Botswana, Morocco and South Africa had the highest leverage in their early years on average. Botswana, Tanzania and Uganda between 2000-2005 had a median leverage level of zero.

From the analysis, the general trends showed a very low and stable leverage across all the countries selected. One major reason for the very low leverages across Africa is the unwillingness of the banks to grant long term financing, which occurs for several reasons, including political stability/instability across Africa. Banks are nervous about granting credits to firms in an environment of political uncertainties (Demetriades and Fielding, 2009). Another reason, put forward by Boyd *et al.* (2001), is that countries with long experience of inflationary surges tend to have lower monetary depth, and, therefore, financial institutions in such countries are unable to provide the needed capital. According to Honohan and Beck (2007), monetary depth is lowered by the tendency of wealth holders to hold their liquid assets outside Africa: the ratio of offshore deposits to domestic bank deposits is significantly higher in Africa than in other regions of the world (Honohan and Beck, 2007). This tendency points to capital flight as one factor exacerbating the low rate of domestic savings (Collier and Gunning, 1999; Ndikumana and Boyce, 2002; Collier *et al.*, 2004), though additional factors are at work, including the requirement imposed by some foreign financiers for African importers to post cash collateral abroad.

Honohan and Beck (2007) mentioned a low intermediation ratio (that is, the low share of deposits intermediated into private sector credit) as another striking feature of the African financial system. In Africa, the median banking system allocates more of its resources to liquid assets and lending to government than do systems in other regions, thus implying a lower share of credit allocated to the private sector. Given the importance of private sector credit for economic growth, finding effective ways of ensuring that the banks channel more of their resources into the domestic private sector is crucial for financial sector development. However, firms in Africa finance less investment with equity finance than do firms in any other region, most likely reflecting the underdevelopment of capital markets, and they finance less investment with trade finance than firms in any other region, which might reflect low levels of trust (Honohan and Beck, 2007).

3.4.2 Determinants of capital structure

Table 3.4 Summary results of fixed effect and general method of moment

This Table presents a summary of the results of the panel data regression for both the firm and country specific factors, using data from 1994-2011. The firm specific variables are as follows: Leverage (Lev), which is the dependent variable and defined as the total debt to total assets, Investment opportunities (Innopp.), which are the ratio of market value of assets to total assets, Profitability (Prof), which is defined as earnings before interest and tax to total assets, Size (Size), which is defined as the natural logarithm of total assets, Non-debt tax shield (NDOTS), which is measured as depreciation of expenses to total assets, and Target payout (Tag.payt), which is defined as dividend to earnings per share. The country specific factors are as follows: Gross domestic product at constant price (GDPcons), used as a proxy for measuring economic development, Domestic credit of banks to GDP (DCB%GDP), used as a measure of banking development, the Rule of law (RoL), which is a vector for governance, and. Corruption (Cor), which is a vector for governance. All regressions were estimated using panel data estimation, fixed effects and general method of moments. The superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively. The following tests are also reported: (1) Observation, (2) The Wooldridge test for autocorrelation, which was significant for the first three models (3) The Sargan and Hansen test for over identification restrictions, which confirmed the absence of an exogeneity problem (4) The Arellana-Bond test for second order serial correlation, which indicated no serial correlation. Model 4 (GMM) coefficients were used for interpretation

Variables	**Fixed effect (1)**	**Fixed effect (2)**	**Fixed effect lag (3)**	**GMM (4)**
Lag leverage	-	-	-	0.35***
Lnv.opp	-0.01**	-	0.01***	0.01
Prof	-0.04***	-	-0.31***	-0.17***
NDTS	0.00	-	0.00	-0.00
Size	0.02***	-	0.03***	0.03***
Tag.payt	-0.01	-	-0.01	-0.01
GDP (real GDP)	-	-0.00***	-.001***	-.001**
DCB%GDP	-	0.01***	0.01**	0.01*
Cor	-	-0.05***	-0.08***	-0.06*
Rol	-	0.04**	0.06*	0.03
Constant	0.05***	0.16***	0.02	
Observation	4177	5282	3155	1866
R-squared:Within	0.02	0.02	0.10	-
Between	0.01	0.00	0.04	-
Overall	0.02	0.00	0.01	-
1st order corr AR(1)	-	-	-	0.00
2nd order corr AR(2)	-	-	-	0.13
Sargan test over. rest.	-	-	-	0.02
Hansen test over. rest.	-	-	-	0.78

From the regression Table 3.4, in the first model, where the country factors are not taken into account, there is a negative effect by investment, but when country factors are considered in the model, investment changes to positive. This suggests that the effect of investment on

leverage is dependent on the country factors. Therefore, in Africa there is a positive effect of investment when country variables are taken into account. The high corruption level effect on investment will be negligible. When there is low corruption and good rule of law, then the actual, positive, impact of investment is recognised. The observations reduced when GMM is applied, due to the fact it uses lag as an instrument where year data is excluded and, therefore, reduces the number of observations.

The results showed that lag of leverage, profitability, firm size, gross domestic product, domestic credit provided by the banking sector, and corruption, were significantly associated with leverage. Model 4 (GMM) coefficients were used for interpretation and the estimated parameters were interpreted holding all other variables in the model constant.

3.4.2.1 Lag leverage

. From Table 3.4 Model 4, the estimated coefficient of the lagged leverage was significant at the 1% level for firms in Africa. The coefficient for lag leverage was 0.35, which gives a positive relationship between lag leverage and leverage. The implication is that a unit increase in the firm's previous leverage increased the current year leverage by 0.35, holding all other factors constant. The size of the coefficient impacts largely on current year leverage. Theoretically, the result is consistent with the findings of Nor *et al.* (2011) in their analysis of Malaysia, Singapore and Thailand. They maintained that if a firm's actual leverage deviates from the target leverage, the firm will undertake some adjustment process to attain the target leverage. This might be the situation for firms in Africa. Fischer *et al.* (1989), however, contend that capital market imperfections may prevent an instantaneous adjustment of the actual leverage to the desired level.

3.4.2.2 Leverage and investment opportunities

Table 3.4, above, provides the regression results with leverage as the dependent variable. As indicated in Model 4, the coefficient of investment opportunities was 0.01, but not significant. Economically, it does not explain leverage in Africa countries. Empirically, the result of a positive significance supports the expected sign for Hypothesis 1, which is consistent with the findings of Salawu and Agboola (2008), who also found a positive relationship among Nigerian non-financial firms. The result of the coefficient again confirms the findings of Frank and Goyal (2003). However, the result is not consistent with the findings of Jensen (1986) and Stulz (1990), Yuan and Kazuyuki (2011) and Ahn *et al.* (2006). The coefficient of a positive relationship is consistent with the Pecking Order theory, which states that

investment in fixed assets and working capital must have a direct relationship with debt, after controlling for cash flow.

3.4.2.3 Profitability and leverage

From Table 3.4 Model 4, the results of the regression analysis for the profitability variable produced a significance negative coefficient of -0.17 at the 1% level of significance, indicating a negative relationship between profitability and leverage. The inverse relationship demonstrated that an increase in profitability leads to less leverage. The interpretation is that a unit increase in profitability decreases the leverage by 0.17, when all other variables are fixed. The absolute coefficient showed that profitability impacts strongly on leverage. Theoretically, this result supports Hypothesis 2 as a negative association, which is consistent with the Pecking Order model, which predicts an inverse relationship between the two variables. It is also a confirmation of many empirical studies, such as studies by (Myers, 1984), (Michaelas *et al.*, 1999), (Cassar and Holmes, 2003), (Gedajlovic *et al.*, 2003), Sheel (1994), Sunder and Myers (1999), Wald (1999), Fama and French (1998), Booth *et al.* (2001), and Titman and Wessels (1988). Their observations have been that highly profitable firms have lower levels of leverage than less profitable firms, because they first use their earnings before seeking external capital (there is no need to consider external sources of finance when earnings are high). This result supports the prediction of the Pecking Order Model, and is therefore applicable also to African firms.

3.4.2.4 Leverage and non-debt tax shield

The regression analysis produced a negative coefficient of -0.01. However, the relationship indicated that it was statistically insignificant, as reflected in Model 4. Theoretically, the result rejects Hypothesis 4 as a negative relationship, although it is consistent with the results of Graham and Harvey (2001), AL-Shubiri (2010) and Bradley *et al.* (1984), who indicated that if firms strongly undertake investment in tangible assets, both tax credits and depreciation would be high, and, therefore, will result in higher debt. This assertion has further been explained by Graham (2003), who suggested that if firms with huge earnings decide to undertake high investment through the use of debt, they will have a positive relationship between the non-debt tax shields and leverage. Because of the benefits from tax shields, firms normally tend to consider debt as part of their decisions in order to take advantage of interest deductibility (Chakraborty, 2010). However, it contradicts the results from Wiwattanakantang (1999) and Ozkan (2001), who found an inverse relationship

between leverage and the non-debt tax shield. The findings of the positive relation reject the expectation of the Trade-off theory.

3.4.2.5 Leverage and target payout

Different results reporting divergent relationships have been indicated in the literature. For instance, while Ahmad *et al.* (2011) reported a negative relationship between leverage and target payout, Beattie *et al.* (2006) and Frank and Goyal (2004) reported a positive relationship. In this study, the regression results for target payout, as indicated in Table 3.4 Model 4, is -0.01, indicating that the relationships established by the coefficients is negative. However, the result was not statistically significant. Theoretically, the result is not in line with the Pecking Order Theory's expectation of a positive sign. The negative relationship could mean that the firms were interested in future investments and would accumulate all their earnings to undertake such investment, and also pay shareholders after accomplishing their investments Ahmad *et al.* (2011).

3.4.2.6 Leverage and firm size

.Regarding the relationship between leverage and size, the results of the regression from Table 3.4 Model 4 show a very significant positive relationship, with a P-value of 0.01 and a coefficient of 0.03. The direct association is an indication that an increase in the size of the firm, as a result of diversification, will lead to more leverage. The implication is that a unit increase in the size of the firm increases the leverage by 0.03, all things being equal. Empirically, this result supports Hypothesis 3 and confirms the findings of Castanias (1983), Titman and Wessels (1988), Wald (1999), cited in Abor (2008), Booth *et al.* (2001), Fama and French (2002), Kayo and Kimura (2011), and Psillaki and Daskalakis (2009). Suggested explanations in the literature include that large firms tend to have more leverage, perhaps because they are more transparent, that they have lower asset volatility, are more diversified, that they naturally sell large enough debt issues so that the fixed costs of public borrowing are not prohibitive, and that they have a lower probability of default and less financial distress costs. The results support the Trade-off theory.

3.4.2.7 Leverage and governance factors

.Many studies have found that a firm's capital structure is affected by the strength of a country's legal system and public governance. The result of the regression from Model 4 indicates positive coefficients of 0.03, but it is statistically insignificant between the **rule of law and leverage**. Theoretically, the result of a positive coefficient supported Hypothesis 6,

which has been confirmed by Fan *et al.* (2012), Cheng and Shiu (2007), La Porta *et al.* (2000), Demirgüç-Kunt and Maksimovic (1999), de Jong *et al.* (2008) and Deesomsak *et al.* (2004), who have suggested that in countries where legal and regulatory frameworks protect investors, there is a willingness on their part to finance firms in that country. This will definitely increase firm leverage. Even though the relationship identified in this study was insignificant, the positive relationship established conforms to the literature.

From Table 3.4 Model 4, for the governance issue of **corruption**, the results indicate a negative coefficient of -0.06 at the 10% significant level. This implies that an increase in corruption will cause a reduction in leverage. The implication is that a unit increase in the corruption index decreases leverage by 0.06, when all other factors are held constant. The absolute value of the coefficient indicated that the impact of corruption on leverage was very small. Theoretically, the finding is in line with Hypothesis 6, and confirms the findings of Fan *et al.* (2008), who suggested that because of high levels of corruption among particular firms, their financial leverage decreased in the long-term, but not in the short-term. They explained that being connected with corrupt bureaucrats gives firms the opportunity of getting access to debt, but this debt benefit disappears when the corruption connection is broken, due to the arrest of these bureaucrats. This confirms the hypothesis that governance factors impact on leverage.

3.4.2.8 GDP growth and leverage

.The result of the regression analysis gave a negative coefficient of -0.01, indicating a negative relationship. The coefficients, however, were very significant, showing a significance level of 5%. The interpretation is that a unit increase in gross domestic product decreased the leverage by 0.001, all things being equal. This result of a negative coefficient supported Hypothesis 7, but contradicts the findings of Frank and Goyal (2004). It also partially contradicts the work of Booth *et al.* (2001), who also found a positive correlation between the real GDP growth rate and the total debt ratio. However, in that same work there was a negative relationship with the long term market debt ratio in developing countries. In this regard, therefore, the negative coefficient obtained is consistent with the later findings of Booth *et al.* (2001) and Song and Philippatos (2004) cited by Gurcharan (2010). Gurcharan (2010) concluded that the negative relationship identified is an indication that countries with a high rate of economic growth will use lower levels of debt to finance new investments. The findings confirmed the hypothesis.

3.4.2.9 The domestic credit of banks as a percentage of GDP

The regression result for this variable was consistent with the literature, especially with the findings of Frank and Goyal (2004) and Jõeveer (2006), who found a positive relationship. The result showed a significantly positive coefficient of 0.01, at the significant level of 10%. The positive relationship is an indication that the ratio of domestic credit provided by the banks to GDP allows more funds to become available in the local market, which, therefore, enables individuals to access more debt (Frank and Goyal, 2004; Jõeveer, 2006). The implication is that a unit increase in the domestic credit of banks increased leverage by 0.01, with all other factors remaining constant. The results confirmed the hypothesis.

3.5 Conclusions and implications

This study examined the trends and determinants in capital structure in some selected African countries. Applying regression analysis and a partial standard adjustment model, the study measured the relationship between the dependent (leverage) and independent variables which were investment opportunities, profitability, size, target payout, and the non-debt tax shield. The study further looked at the capital structure trends across countries and the relationship between leverage and country specific factors, which are gross domestic product, the domestic credit of banks, the rule of law and corruption.

The study found a positive relationship between leverage and investment opportunities, leverage and size, leverage and the non-debt tax shield, leverage and the domestic credit of banks, and leverage and rule of law. However, a negative relationship was identified between profitability and leverage, target payout and leverage, leverage and gross domestic product, and leverage and corruption. The non-debt tax shield and target payout are not significant in determining capital structure. Moreover, lag leverage, investment opportunities, profitability, size, the domestic credit of banks, gross domestic product, corruption and the rule of law determined the capital structure at 1%, 5% and 10%.

In general, the study also found that the leverage trends across the selected African countries under examination were very low and stable. There are several reasons for this. One is the unwillingness of the banks to grant long term credit because of political instability. Another reason is the long experience of inflationary surges which tend to lower monetary depth, and, therefore, financial institutions in such countries are unable to provide the needed capital. There is also the tendency of capital flight from Africa and, as a result, the ratio of

offshore deposits to domestic bank deposits is significantly higher than other regions of the world, which tends to lower the rate of savings. More so, firms in these selected African countries finance, less investment with equity and less in trade finance which might reflect the underdevelopment of the capital market and the low levels of trust.

In conclusion, capital structure decisions in Africa are not only affected by firm specific factors, but also by country specific variables, such as corporate governance and the institutional environment within which the firm operates.

The findings have far reaching implications for firms and the individual countries involved in the study. First and foremost, firms have been provided with the factors that they must consider relevant in the capital structure decisions. Such decisions that affect firm size and investment opportunities, such as mergers and acquisitions could be influenced by the results of the study. Managers will also understand the relationship established by the Trade-off and Pecking Order theory to manage their firms' operations. At the country level, governments must understand that firms can achieve much when there is good governance, and that strengthening institutions in Africa will invariably have a positive effect on business and industry. These findings also open up more avenues for further research into capital structure in Africa.

Chapter 4: **Corporate cash holdings across African countries**

ABSTRACT

This chapter examines the determinants of corporate cash holding and identifies the levels of trends for listed non-financial firms across African countries. The paper considers a panel dataset of 608 firms from 14 African countries during the period 1994-2011. The study employed Bates *et al.* (2009)s' model with modifications and by applying regression analysis and a partial standard adjustment estimations the study measured the relationship between the cash holdings, and firm and country specific factors. The study found a positive relationship between cash flow, net working capital, Capital expenditure, firm size, return on asset, rule of law, gross domestic product and domestic credit of banks. However, a negative relationship was reported between leverage, dividend payout, market to book value ratio and cash holding. The results provide evidence that cash holdings in these selected countries are significantly determined by leverage, net working capital, capital expenditure and return on asset. Firms with leverage tend to hold less cash. Firms with capital expenditure, net working capital and return on asset hold large amounts of cash. The study also found a stable trend in the cash holdings of firms in African countries. The result of the coefficients suggests that both the Trade-off and Pecking Order theories are applicable in these countries, but they were more supportive of the Pecking Order. The conclusion, therefore, indicates that firm specific factors are important in Africa for determining cash holdings, while country specific factors are insignificant

4.1 Introduction

When a firm keeps money available to spend rather than investment, that firm is said to be holding cash. In a World Bank Policy Research Paper, Love (2011) defines cash holdings as the portion of retained earnings that is not spent on expanding the business. The earliest studies of cash holdings have been attributed to Baumol (1952), Miller and Orr (1966) and Meltzer (1963). However, according to Al-Najjar (2013), interest in studying why firms hold cash grew after Opler *et al.* (1999) investigated the determinants of cash holdings. Opler *et al.* (1999) contended that it would be irrelevant to hold liquid cash if a perfect market existed. They added that because of the absence of a liquidity premium there is no opportunity cost for the holding of liquid assets. They defined a firm to be short of liquid asset when it had to cut back on investment, cut back on dividends, or raise funds by selling securities or assets. They were emphatic in saying that it is costly for a firm to be short of liquid assets (Opler *et al.*, 1999).

Why do firms hold cash at all? What are the determinants of cash holdings? The purpose of this study was to identify the empirical evidence about the determinants of cash holdings in Africa, and also to find out how theories relating to corporate cash holdings are relevant to firms in Africa. The objectives of the study were:

Firstly, to identify which of the capital structure theories are relevant to cash holdings of African firms. Secondly, to define the determinants of corporate cash holdings and, finally, to identify the levels of, or trends in, cash holding across firms in these selected Africa countries.

Even though much research has been done in this regard for the developed economies and the emerging economies of Asia and the Middle East, very little research has been done regarding Africa, with the exception of studies by Love (2011), Ogundipe *et al.* (2012a) and Isshaq *et al.* (2009). These have been individual country studies on Egypt, Nigeria and Ghana respectively.

This study is motivated by the fact that there is the need for a better understanding of the concept of cash holdings in an African context, especially considering the fact that not much work has been done in this area compared to Western economies and the emerging economies of Asia. Therefore, the benefit of holding cash in firms' operations is lacking. Again, because the study focused on the trends in cash holdings due to the temporary effects of shocks and risks at a specific time period, it will provide the necessary information for

managers and investors regarding how solid and liquid the firms are in Africa countries, in terms of undertaking profitable projects at any point in time. This will benefit the firms and shareholders and give a more detailed understanding of the magnitude of country and firm factors impact on corporate cash holding. The trends will further provide direction and encourage firms and regulators of these selected African countries to make decisions regarding cash holdings when the observed factors are considered in the firms' operations and management. It will enable investors to evaluate the performance of the firms and make well informed decisions to invest in Africa countries, knowing that the firms are better positioned in their operations to avoid an unexpected financial burden. Additionally, because firms in African countries faced high constraints and high costs in accessing capital, there is a need to provide firms' information and insight into cash holding policies to avoid unexpected losses and the risk of turning down worthwhile investments. It is therefore believed that the results of this study will shed light on the factors influencing corporate cash holdings which will be beneficial to corporate managers and serve as a basis for research into corporate cash holding.

This paper contributes to the literature in the following ways: (1) It considers panel data from 14 African countries over an 18 year period, which, as far as is known, is the first time research looking at cash holdings in Africa has been conducted. (2) It also provides an understanding of how listed non-financial firms in these selected African countries manage their cash holdings, by testing Pecking Order and Trade-off theories. (3) Additionally, it contributes to the literature by investigating the determinants of cash holdings in these selected Africa countries. Finally, (4) it employs both country and firm specific factors analysis with dynamic panel data estimates, which, as far as is known, has not occurred in previously researched papers about Africa. This paper will also serve as the impetus for a much wider interest in cash holdings in Africa and the basis for theory formation regarding firms in Africa.

The paper has been organized into six sections. Section one introduces the area of research. This is followed by a review of the theories and empirical studies in section two. Section three describes the methodology, followed by a descriptive analysis in section four. The results and discussion are in section five. The conclusions of the paper are presented in section six.

4.2 Theories of corporate cash holding

4.2.1 The Trade-off theory

The Trade- off theory is defined as ways of deciding how much both debt and equity should be captured in a company's capital structure by balancing the cost of debt and the benefits of debt.

According to Al-Najjar (2013), the argument put forward by the Trade-off theory is that firms maximize their values by weighing the marginal costs against the benefits of holding cash. The assumption has been that managers aim to maximize shareholder wealth by holding cash. Ferreira and Vilela (2004) outline three benefits that firms derive from holding cash. They mention that cash holdings reduce the likelihood of financial distress, as it acts as a safety reserve to face unexpected losses or external fundraising constraints. They also contend that cash holdings allow the pursuance of the optimal investment policy, even when financial constraints are met, and, finally, they add that cash holdings contribute to minimizing the costs of raising external funds or liquidating existing assets, as it acts as a buffer between the firm's sources and its use of funds. Ferreira and Vilela (2004) contended that the traditional marginal cost of holding cash is the opportunity cost of the capital due to a low return on liquid assets. According to them, firm characteristics, such as dividend payout, investment opportunity, leverage, size, cash flow and debt maturity are very relevant to cash holding decisions.

4.2.2 Pecking Order theory

The Pecking Order theory, which is also called Pecking Order model, can be defined as the steps or the process that corporations undertake in their chosen capital structure for the operation of the business. It follows a ranking, or a hierarchy, by firms of their financial decision making relating to the firm's capital structure.

This theory suggests that there is no optimal level of cash holdings for a firm (Al-Najjar, 2013). Myers (1984) and Myers and Majluf (1984) suggest that firms follow a pecking order of financing to minimize costs, related to information asymmetry. According to this theory, the order starts with internal sources and firms will use external funding only after the internal sources are exhausted. According to Myers (1984), firms favour external funding by debt compared to equity issuance, since debt has lower information costs than equity financing (Al-Najjar, 2013). Cash can be seen as an outcome of the different financing and investment decisions proposed by the hierarchal pattern of financing (Dittmar *et al.*,

2003). Ferreira and Vilela (2004) claim that cash can be used for financing investments to pay a firm's debt and, in turn, stockpile cash. Dittmar *et al.* (2003) also detect that firms with high levels of cash flow are those which distribute dividends, apply for debt financing, and, as a result, hoard cash. The theory also maintains that bigger and expanded firms are better structured to accumulate more cash, as they are highly profitable (Opler *et al.*, 1999). Below provide a brief review of the firm characteristics that, according to the Trade-off and Pecking Order theories, are relevant to firm cash holdings decisions.

4.2.3 Transactional Cost theory

Keynes' (1936) Transaction Cost Motive theory of holding cash stipulates that firms are likely to increase their cash balances when the costs of raising funds are higher. These costs are usually associated with external financing. Dittmar *et al.* (2003) suggest that there are substantial fixed costs of acquiring outside financing, as well as economies of scale in cash management. Opler *et al.* (1999) explains this theory by assuming that there are costs to buying and selling financial and real assets. In particularly, there is an assumption that there is a cost to raising external funds that takes the form of a fixed cost, plus a variable cost which is proportional to the amount raised. In such a case, Opler *et al.* (1999) maintain that a firm short of liquid assets has to raise funds in the capital markets, liquidate existing assets, reduce dividends and investment, renegotiate existing financial contracts, or some combination of these actions. They conclude that unless the firm has assets that can be liquidated at low cost, it prefers to use the capital markets. However, it is costly to raise funds, regardless of whether the firm does so by selling assets or using the capital markets. The fixed costs of accessing external markets induces the firm to raise funds infrequently, and to use cash and liquid asset holdings as a buffer. As a result, for a given amount of net debt, there is an optimal amount of cash, and cash is not simply a negative debt (Opler *et al.*, 1999). According to Baum *et al.* (2004), this could be the reason why small firms are considered more likely to be financially constrained.

Firms in Africa could particularly be vulnerable due to the underdeveloped nature of the financial market, and also the huge cost of securing cash outside the firm, vis a vis the demands for the payment of dividends to shareholders. This has huge implications for R&D, investments and growth.

4.2.4 Precautionary Cost theory

According to Bates *et al.* (2009), firms hold cash to better cope with adverse shocks when access to capital markets is costly. The precautionary motive also suggests that firms with better investment opportunities hold more cash because adverse shocks and financial distress are more costly for them. This theory was propounded by Keynes (1936), who explained that, besides day-to-day transactions, there are many unforeseen contingencies in the life of firm for which they hold money. Rettl (2011) also explains that from an efficiency perspective, changes in growth opportunities and concurrent variations in the need for future financing capacity, induce precautious managers to adjust corporate cash balances. Firms with better investment opportunities hold more cash to avoid being financially constrained in the future, while firms with poor investment opportunities optimally choose to maintain lower levels of cash.

4.2.5 Access to finance and corporate cash holdings

Petersen and Rajan (1997) maintained that a firm's willingness to provide trade credit has a direct correlation on access to short-term finance. The consequence of this could be important, because during a financial crisis firms' access to bank finance may be limited and the possibility of less trade credit by suppliers may affect their liquidity. Also, according to Sufi (2009), lines of credit are driven primarily by capital market frictions, and a dedicated line of credit overpowers these frictions by guaranteeing that funds are available to undertake important projects. In other words, lines of credit should address the capital market frictions that motivate firms to hold cash as a liquidity buffer. Sufi (2009) is of the opinion that because banks are the most efficient liquidity providers in the economy, firms should rely on lines of credit rather than internal cash. This is an argument that Gatev and Strahan (2006) also share. They also establish that a firm's reliance on credit is an indicator of the level of financial constraint facing the firm.

Saddour (2006), in a study about French firms, found a negative relationship between the cash levels of mature companies and their trade credit. This relationship confirms the findings of Kim *et al.* (1998). Saddour (2006) asserted that if trade credit is positive, the firm's commercial policy consists of selling on credit and paying its suppliers cash. Thus, the company has an immediate financing need and it uses its cash holdings to pay its suppliers. Consequently, its cash level decreases. On the other hand, when the trade credit is negative, the company requires short term payments from its customers and obtains long term

payments from its suppliers. Therefore, it does not have immediate financing needs, and it will consequently accumulate cash to be able to pay its suppliers in the following period.

4.2.6 Access to finance and economic development

Access to finance is critical for sustainable economic growth and social development. Micro, Small and Medium Enterprises are able to capture entrepreneurial opportunities when financial products and services, designed according to their demand, are available to them. According to a report by Nasr and the World Bank (2004), access to finance is important for growth and economic development. They noted that having an efficient financial system that can present essential services can have huge impacts on a country's economic development. Greater financial development increases growth, reduces economic volatility, creates job opportunities and improves income distribution, as has been established by a large body of empirical literature. A well-functioning financial market plays a critical role in channeling funds to their most productive uses, and allocates risks to those who can best bear them. There is ample macroeconomic evidence suggesting that the development of a country is strongly correlated with the development of financial markets (Banerjee, 2001; Levine, 2004).

4.3 The determinants of cash holding and hypotheses development.

4.3.1 Financial leverage

Many researchers have found a negative relationship between corporate cash holding and leverage, for example, Bates *et al.* (2009), D'Mello *et al.* (2008), Ferreira and Vilela (2004), Ozkan and Ozkan (2004), Kim *et al.* (2011a), Pinkowitz and Williamson (2001), Harford *et al.* (2008) etc.

Al-Najjar (2013) also found a negative relationship between cash holding and leverage for Indian firms, but did not find leverage to be a significant determinant in Brazil. However, in a study by Garcia-Teruel and Martinez-Solano (2008) on the determinants of cash holdings of SMEs in Spain, and also work by Ogundipe *et al.* (2012b) relating to Nigerian firms, a positive relationship was found between cash ratio and leverage. The link between leverage and cash holding is that leveraged firms are more likely to hoard cash, due to the higher probability of financial distress. It is suggested that cash levels decrease with more debt (Baskin, 1987). Accordingly, firms with more liquid assets can convert these assets into cash and, in turn, hold lower levels of cash (Ozkan and Ozkan, 2004; Al-Najjar, 2013). Al-Najjar (2013), quoting Ferreira and Vilela (2004), suggests that firms with high levels of debt are less able to stockpile cash. The reason given is that they are better monitored when compared to firms with relatively low debt. Based on the literature, this study hypothesizes that:

Hypothesis 1: There is a negative relationship between the leverage and cash holdings of African Firms.

4.3.2 Cash flow

As with leverage, there is no unanimity in the findings regarding the relationship between cash flow and cash holdings (Kim *et al.*, 2011b). While some empirical studies find negative relationships, others find positive relationships. According to Jensen (1986), managers are restrained when external financiers withhold cash for new investment. On the other hand, managers become free to make new investment when there is increased cash flow. Kim *et al.* (1998), Bao *et al.* (2012) and Shah (2011) find a negative relationship. However, Ferreira and Vilela (2004), Garcia-Teruel and Martinez-Solano (2008), Couderc (2005), Ozkan and Ozkan (2004), Opler *et al.* (1999) suggest a positive relationship. The argument, for example by Opler *et al.* (1999), is that firms experiencing increased cash flows are likely to hold back some earnings, amassing cash holdings that can later fund investment or be put to use in

times of stress. This paper will follow the argument of Opler *et al.* (1999), Ferreira and Vilela (2004) and Ozkan and Ozkan (2004) in hypothesizing that:

Hypothesis 2: There is a positive relationship between cash flow and cash holdings

4.3.3 Capital expenditure

Bates *et al.* (2009) maintain that because of the negative relationship between the need to hold cash and the ease of borrowing, capital expenditure is expected to reduce cash holdings. Kim *et al.* (2011a) make the assertion that capital expenditures improve or create new assets for a firm and, since these assets can become collateral if needed, they also enhance borrowing capacity and undercut the need to hold cash. On the other hand,
Riddick and Whited (2009) suggest that since capital expenditure can potentially proxy for financial distress and investment opportunities, firms with greater capital expenditure are more likely to hold cash.

Empirically, Kim *et al.* (2011a), Iskandar-Datta and Jia (2012), Bates *et al.* (2009) found support for the existence of a negative relationship between capital expenditure and cash holdings. However, Kusnadi (2005), Pinkowitz and Williamson (2001) Opler *et al.* (1999) found a positive relationship between capital expenditure and cash holdings, in that cash holdings increase significantly as capital expenditure increases. Based on Kim *et al.* (2011a), Iskandar-Datta and Jia (2012) and especially Bates *et al.* (2009) findings, it is being hypothesized that:
Hypothesis 3: There is a negative relationship between capital expenditure and cash holdings for firms in Africa.

4.3.4 Firm size

The relationship between firm size and cash holdings has remained a critical aspect of all cash holdings studies (Kim *et al.*, 2011a). It has been proposed, for example by Miller and Orr (1966), that economies of scale in cash management lead smaller firms to hold more cash than larger firms. They added that fees charged in connection with borrowing are not correlated with loan size, making them a fixed cost that is relatively more burdensome to small firms than to large ones. According to them, small firms, therefore, tend to hold more cash. This negative relationship has been confirmed by empirical studies such as Ozkan and Ozkan (2004), and Kim *et al.* (2011a). Another reason for such a relationship has been put forward by Rajan and Zingales (1995) and Titman and Wessels (1988), who assert that larger

firms hold less cash than smaller firms because their diversification gives them a lower probability of financial distress.

The study of publicly traded firms in the United States by Opler *et al.* (1999) and a study of non-financial UK firms by Ozkan and Ozkan (2004), D'Mello *et al.* (2008), Bates *et al.* (2009), Ferreira and Vilela (2004), Harford *et al.* (2008), all confirm the negative relationship between firm size and cash holdings. Therefore this paper hypothesizes that:
Hypothesis 4: There is a negative relationship between firm size and cash holdings.

4.3.5 Dividend payout

The Trade-off theory predicts a negative relationship between dividend payments and cash holdings (Al-Najjar, 2013). The reason adduced by the theory is that ‘‘dividend-paying firms’’ can trade-off the costs of holding cash by reducing dividend payments. In other words, firms that distribute dividends to their shareholders are more able to raise funds at lower costs when needed by reducing their dividend payments (Al-Najjar and Belghitar, 2011). This view has also been shared by Ozkan and Ozkan (2004), who argue that these costs can be avoided by firms facing low internal financing resources by issuing equity or even reducing payment of dividends. They state that: ‘‘firms that currently pay dividends can afford to hold less cash as they are more capable of raising funds when needed by cutting dividends’’(Ozkan and Ozkan, 2004 p.2108). Other studies, such as one by Opler *et al.* (1999), also support this negative relationship when they state that if the firm has a shortage of liquid assets, it can survive by either decreasing investment or dividends, or by raising external funds through security issuances or asset sales when there is a shortage of the liquid assets. In view of this evidence, this study hypothesizes that:
Hypothesis 5: There is a negative association between dividend payment and cash holdings.

4.3.6 Net working capital

Net working capital (NWC) consists of assets that substitute for cash (Bates et al, 2009). The assumption, according to Iskandar-Datta and Jia (2012), is that firms holding more working capital will hold less cash. D'Mello *et al.* (2008) also found a negative relationship between net working capital and cash holdings. Other studies by Ferreira and Vilela (2004), Pinkowitz and Williamson (2001), Opler *et al.* (1999) and Ogundipe *et al.* (2012a) all found a negative relationship between net working capital and cash holdings. Based on the above empirical evidence, the paper hypothesizes that:

Hypothesis 6: Networking capital is negatively related to cash holdings

4.3.7 Market-to-book ratio

Shyam-Sunder and Myers (1999) have argued that firms with high cash flow also have a high market-to-book ratio. This condition occurs because these firms can be expected to be profitable in the future. This positive relationship has been confirmed by Kim *et al.* (1998), Opler *et al.* (1999), Ferreira and Vilela (2004), Ozkan and Ozkan (2004), Drobetz and Grüninger (2007), Garcia-Teruel and Martinez-Solano (2008), Kim *et al.* (2011a), Kusnadi (2005), Ogundipe *et al.* (2012b), and Iskandar-Datta and Jia (2012). Myers and Majluf (1984) point out that firms whose value is largely determined by their growth opportunities incur higher external financing costs. Additionally, Harris and Raviv (1991), Shleifer and Vishny (1992) argue that firms with more growth opportunities may also be expected to incur higher costs for financial distress and bankruptcy because their value depends on their growth opportunities, rather than on tangible assets or specific cash flows. Thus, this type of firm will keep higher cash holdings to avoid these costs. Therefore this paper hypothesizes that:
Hypothesis 7: There is a positive relationship between market-to-book ratio (growth opportunity) and cash holdings.

4.3.8 Return on assets

Return on assets (ROA) has been measured by the ratio of net profits to the book value of assets. The Trade-off theory predicts a negative relationship between return on assets and cash holdings, claiming that profitable firms have enough cash flow to avoid underinvestment problems (Myers and Majluf, 1984; Kalcheva and Lins, 2007). However, the Pecking Order theory predicts a positive relationship, by indicating that cash holdings fluctuate with cash flow (Kim *et al.*, 1998). Ogundipe *et al.* (2012a), however, found a positive relationship between cash holdings and return on assets. This paper therefore predicts that:

Hypothesis 8: There is a positive relationship between cash holdings and return on assets.

4.3.9 Rule of law

Analysis by Ferreira and Vilela (2004) suggests that firms in countries with superior investor protection mechanisms hold less cash. This assertion had been made earlier by Dittmar *et al.* (2003), who extended their analysis to include not only shareholders' rights, but also the creditors' rights and the quality of law enforcement. These findings have also been confirmed by Guney *et al.* (2003) However, Pinkowitz *et al.* (2003) also said that countries with poor investor protection have incentives to make decisions that enable them to appropriate more private benefits from control. Because it is easier to expropriate cash than fixed assets, firms

in countries with poor investor protection are predicted to hold more cash. From this, therefore, it is hypothesized that:

Hypothesis 9: There is a negative relationship between the rule of law and cash holdings.

4.3.10 Gross domestic product and cash holdings

Literature on the relationship between Gross Domestic Product and cash holdings is scanty. However, Garcia-Teruel and Martinez-Solana (2008), using interest rates as a measure of economic growth, maintain that when the interest rates in the economy increase firms reduce their cash holdings. However, Garcia-Teruel and Martinez-Solana (2008) found no relationship between cash holdings and GDP growth. Regarding the domestic credit of banks, they mention that the cash level of a firm falls when the use of bank debt rises (Garcia-Teruel and Martinez-Solano, 2008)

4.4 Empirical findings

Table 4.1 Summary variables and definitions

Variables	Label	Definitions
Dependent variable:		
Cash holding (Cash ratio)	CASHR	Cash and marketable securities divided by total assets
Independent variables:		
Financial leverage	LEV	Total debt divided by total assets (proxy for financial distress)
Market-to-book ratio	MKTBR	Market value of equity divided by total assets (measure for investment opportunities)
Cash flow	CF	Earnings before interest, taxes, depreciation and amortization divided by total assets (proxy for internal source of finance)
Net working capital	NWC	Working capital less cash and marketable securities divided by total assets (proxy for liquid asset)
Capital expenditure	CE	Capital expenditure divided by total assets (proxy for investment or demand for cash)
Firm size	SIZE	Natural logarithm of total assets
Dividend payout	DIV	Dividend payout divided by total equity
Return on assets	ROA	Net income divided by total assets (proxy for profitability)
Rule of law	ROL	Perception of the extent of confidence and law abiding in society, quality of contract enforcement, courts, property rights, crime and others.)
Gross domestic product (real GDP)	GDPC	Gross domestic product at constant price (for measuring economic development)
Domestic credit of banks to GDP	DCB%GDP	Domestic credit of banks as a percentage of GDP

4.4.1 Descriptive statistics

Table 4.2 Summary statistics of firm and country characteristics across firms in the sample 1994-2011

This table shows descriptive statistics for the median values for the firm and country specific factors from 14 selected African countries over the period 1994-2011. The firm specific variables are as follows. Corporate cash holding (CASHR), which is the dependent variable, defined as cash and marketable securities to total assets. Market-to-book ratio (MKTBR), measured by the total assets less total equity plus market value of equity to total assets. Financial leverage (LEV), which is the ratio of total debt to total assets. Cash flow (CF), which is the earnings before interest, taxes, depreciation and amortization (EBITDA) to total assets. Net working capital (NWC), defined as the working capital less cash and marketable securities to total assets. Capital expenditure (CE), defined as capital expenditure to total assets. Firm size (SIZE), which refers to the natural logarithm of total assets. Dividend payout (DIV), defined as the dividend payout to total equity. Return on asset (ROA), defined as the net income to total assets. The country specific factors are as follows. Rule of Law (RoL), which is a vector for governance indicator defined as the perception of extent of confidence and law abiding in society, quality of contract enforcement, courts, property rights, crime etc. Gross domestic product at constant price (GDP cons), which is a proxy for measuring economic development. Domestic credit of banks as a percentage to GDP (DCB%GDP), used as a measure of banking development. The table shows the approximate average from the investigated variables across firms. Data was sourced from DataStream, Bloomberg and World Bank Development Indicators. NB: GDP is in billions.
See over.

Table 4.2 Summary statistics of firm and country characteristics across firms in the sample 1994-2011 (Cont.)

YEAR	CASHR	LEV	MKTBR	CF	NWC	CE	SIZE	DIV	ROA	RoL	GDP	DCB%
1994	0.06	0.09	1.11	0.15	10.41	-0.05	5.38	0.44	0.05	-	38.6	27.90
1995	0.07	0.09	1.12	0.15	10.18	-0.06	5.32	0.22	0.06	-	39.5	32.70
1996	0.06	0.09	1.14	0.16	13.37	-0.05	5.04	0.32	0.08	-0.01	41.2	31.20
1997	0.07	0.10	1.20	0.14	12.90	-0.05	5.18	0.36	0.07	-	42.4	39.70
1998	0.08	0.10	0.99	0.16	12.33	-0.05	4.85	0.39	0.08	-0.03	43.2	43.90
1999	0.08	0.12	0.88	0.14	8.98	-0.06	4.68	0.63	0.07	-	43.6	47.70
2000	0.08	0.13	0.82	0.14	8.26	-0.05	4.77	0.48	0.07	-0.01	46.0	51.00
2001	0.08	0.13	0.76	0.14	7.57	-0.06	4.66	0.53	0.07	-	47.4	44.60
2002	0.08	0.13	0.73	0.14	8.53	-0.05	4.67	0.58	0.06	-0.01	48.1	43.40
2003	0.07	0.13	0.82	0.12	7.99	-0.04	4.72	0.44	0.06	-0.05	53.1	42.40
2004	0.07	0.12	0.94	0.15	6.84	-0.04	4.68	0.55	0.06	0.02	58.7	42.60
2005	0.07	0.10	1.09	0.15	7.33	-0.04	4.65	0.33	0.07	-0.12	61.9	46.20
2006	0.08	0.12	1.22	0.15	7.73	-0.04	4.77	0.28	0.08	-0.22	65.7	48.60
2007	0.08	0.12	1.44	0.14	9.77	-0.04	4.88	0.20	0.08	-0.20	70.0	45.50
2008	0.07	0.12	1.17	0.15	13.09	-0.06	5.02	0.26	0.08	-0.09	74.2	42.80
2009	0.07	0.13	1.08	0.12	10.59	-0.04	5.03	0.24	0.06	-0.09	79.4	38.60
2010	0.08	0.11	1.13	0.14	12.71	-0.04	5.09	0.17	0.06	-0.11	85.6	33.10
2011	0.07	0.11	0.97	0.13	12.13	-0.04	5.27	0.09	0.06	-0.42	91.3	31.30

From Table 4.2 above, the cash ratio (cash holdings) for the firms across the African countries showed an upward trend between 1994-2000, a downward trend between 2000-2005 and thereafter increases, but at a decreasing rate between 2006-2007, with the median cash holding ranging from 0.06 to 0.09. The cash holding reached its highest in 1999. Overall, the trend indicated that the median cash holding in Africa was stable, which is in sharp contrast with the US and UK (Bates *et al.*, 2009) and (Opler *et al.*, 1999). Observing the formal test of normality, all the cash ratios showed non-normality in the error term and, hence, transformation was performed for the cash ratio variables. In terms of the firm specifics, Table 4.2 shows that leverage (proxy for financial distress) increased, but was very low and stable. The market to book ratio range was between 0 to 1.44. The cash flow ranged from 0.12 to 0.16. Net working capital (proxy for liquid asset) indicated a range of 6.84 to 13.37. Firm size (proxy for transactional cost) and dividend payout (proxy for dividend payment to shareholders) ranged between 5.38 to 5.27, 0 to 0.68 respectively. Capital expenditure (proxy for demand for cash or investment opportunity) and Return on assets (proxy for profitability) ranged from -0.04 to 0.063. For the country specific analysis, Gross Domestic Product had a range of 3.86 to 9.13, indicating an upward trend for the firms across these countries under examination. The domestic credit of banks as a percentage of Gross Domestic Product ranged between 27.9 to 48.6, even though it indicated fluctuations. The rule of law ranged between -.01 to -.42, which implies that there was a low level in governance in Africa since, according to the World Bank Data Base, if the rule of law ranges between -2.5 and 2.5, it implies that countries with -2.5, and 2.5, show a low and high level of rule of law, respectively. The rule of law ranged between -.01 to -.42, which implies that the governance practiced in Africa with regard to rule of law was very low.

See over.

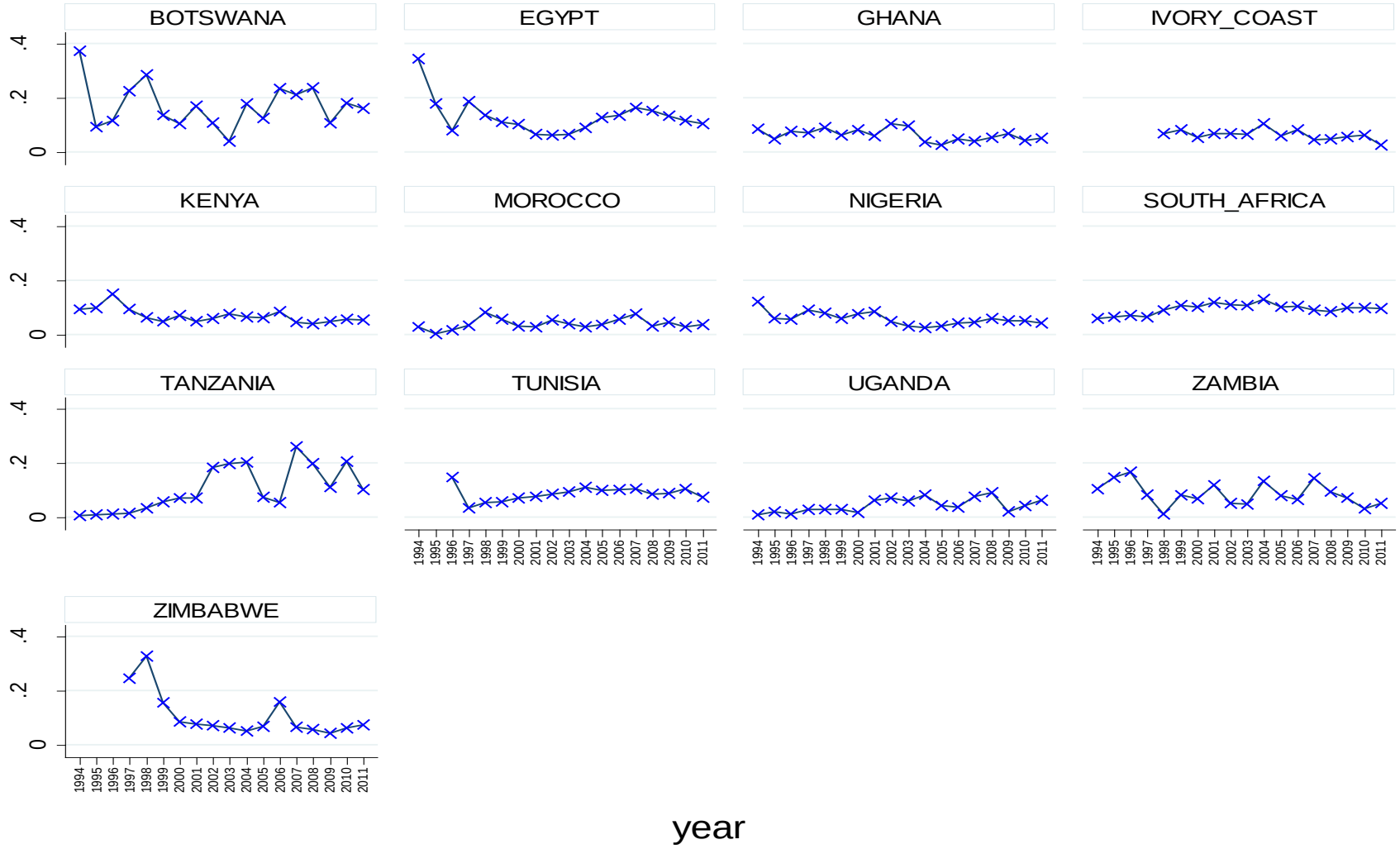
Table 4.3 Evolution of corporate cash holding across African countries examined in the sample 1994-2011

YEAR	BOT	EGY	GH	IVC	KEN	MOR	NIG	SA	TAN	TUN	UGAN	ZAM	ZIM
1994	0.37	0.34	0.08	-	0.09	0.02	0.12	0.05	0.01	-	0.01	0.10	-
1995	0.09	0.17	0.04	-	0.09	0.01	0.05	0.06	0.01	-	0.01	0.14	-
1996	0.11	0.07	0.07	-	0.14	0.01	0.05	0.06	0.01	0.14	0.01	0.16	-
1997	0.22	0.18	0.07	-	0.09	0.03	0.09	0.06	0.01	0.03	0.02	0.07	0.24
1998	0.28	0.13	0.09	0.06	0.06	0.08	0.08	0.09	0.03	0.05	0.02	0.01	0.32
1999	0.13	0.11	0.06	0.08	0.04	0.05	0.05	0.10	0.05	0.05	0.02	0.08	0.15
2000	0.10	0.10	0.08	0.05	0.07	0.03	0.07	0.10	0.07	0.06	0.01	0.06	0.08
2001	0.17	0.06	0.06	0.06	0.04	0.02	0.08	0.11	0.06	0.07	0.06	0.11	0.07
2002	0.10	0.06	0.10	0.06	0.06	0.05	0.04	0.11	0.18	0.08	0.06	0.04	0.07
2003	0.18	0.12	0.11	0.09	0.08	0.09	0.07	0.13	0.19	0.14	0.10	0.05	0.06
2004	0.30	0.13	0.04	0.12	0.06	0.08	0.06	0.14	0.17	0.13	0.11	0.18	0.07
2005	0.12	0.12	0.02	0.06	0.06	0.03	0.03	0.10	0.07	0.09	0.04	0.07	0.06
2006	0.23	0.13	0.04	0.08	0.08	0.05	0.04	0.10	0.05	0.10	0.03	0.06	0.15
2007	0.21	0.16	0.04	0.04	0.04	0.07	0.04	0.0	0.25	0.10	0.07	0.14	0.06
2008	0.23	0.15	0.05	0.04	0.03	0.03	0.05	0.08	0.19	0.08	0.09	0.09	0.05
2009	0.10	0.13	0.06	0.05	0.04	0.04	0.05	0.09	0.10	0.08	0.02	0.06	0.04
2010	0.18	0.11	0.04	0.06	0.05	0.02	0.05	0.10	0.20	0.10	0.04	0.03	0.06
2011	0.16	0.10	0.05	0.02	0.05	0.03	0.04	0.09	0.09	0.07	0.06	0.04	0.07

Botswana (**BOT**), Egypt (**EGY**), Ghana (**GH**), Ivory Coast (**IVC**), Kenya (**KEN**) Morocco (**MOR**), Nigeria (**NIG**), South Africa (**SA**), Tanzania (**TAN**),Tunisia (**TUN**), Uganda (**UGAN**), Zambia (**ZAM**) and Zimbabwe (**ZIM).**

From Table 4.3 above, the general cash ratio (cash holding) for the selected African countries were relatively stable. The cash holdings for Botswana and Egypt range between 0.09 to 0.37 indicated the highest level of cash holding but stability. Ghana, Ivory Coast, Kenya, Morocco, Nigeria, South Africa, Tanzania, Tunisia, Uganda, Zambia and Zimbabwe ranged between 0.01 to 0.24, indicating stable cash holding. Generally, the ranges of cash ratio across these countries showed that firms across the selected countries in Africa had stable cash holdings. The stability of the cash holdings across the selected countries is illustrated below.

Figure 4.1 Evolution of median cash holdings across countries in the sample 1994-2011



Source: Bloomberg and author's calculation

Figure 4.1 above shows the median cash to assets ratio for the 1994-2011 period in the selected countries in Africa. The pattern indicated a range in the cash ratio between 0 and 0.4 in the selected Africa countries. The general pattern in the cash holding across all the countries appears very stable. It was only Botswana and Egypt that had high cash holdings for 1994, but this dropped to a very stable level afterwards. The cash holdings of the individual countries showed the following: The cash ratio pattern for Botswana, Egypt, Kenya, South Africa, Nigeria, the Ivory Coast, Uganda, Morocco, Ghana, Tunisia, Tanzania, Zimbabwe and Zambia were ranged between 0 and 0.4, and was stable, but Botswana and Egypt recorded very high cash holdings for 1994 and thereafter became stable.

Generally, it can be seen from the above analysis, both Table 4.2 and Figure 4.1 showed that cash ratios (cash holdings) in the selected African countries were stable, apart from Botswana and Egypt, with high levels of cash holding during the 1994 period.

One reason for the stability of the cash holdings is due to lack of research and development expenditures in these selected African countries, which do not compel them to hold large amounts of cash as a protection against future unexpected events or shocks. Bates *et al.* (2009) and D'Mello *et al.* (2008) argue that firms that undertake greater research and development need to keep a larger cash holding against shocks. Bates *et al.* (2009) also put forward that the cash movement from firms towards acquisition signifies that firms have to keep larger cash balances for outflow in terms of acquisition. The evidence from the data suggests that firms across African countries lack acquisition activity, and therefore do not need to have enough cash, which emphasizes the point of stability of cash holdings in Africa across the firms.

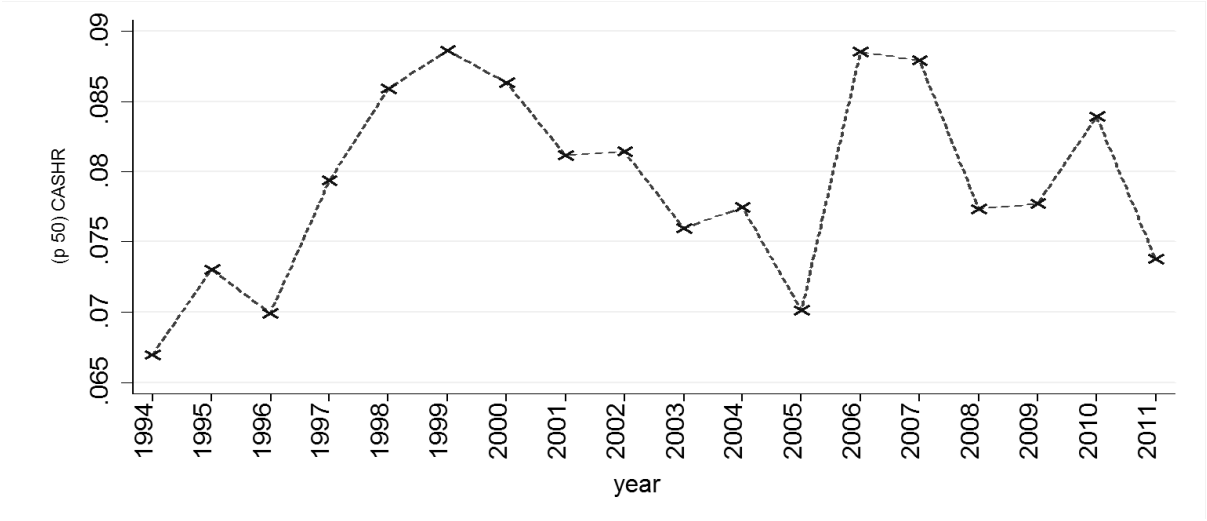
As indicated by Opler *et al*, 1999; Ferreira and Vilela, 2004; Ozakan and Ozkan, 2004, lack of investment by African firms is another reason for the low and stable cash holdings. According to Garcia-Teruel and Martinez-Solano (2008), firms with more investment opportunities keep higher liquidity levels, in order not to limit or cancel their profitable investment projects. Since most of these firms have very low investment opportunities, they hold very low and stable cash.

Another reason for the recorded stable cash holdings could be attributed to the country specific factors of good governance and the rule of law. Almost all countries included in the study had strong legal regimes that protected the rights of investors. As

indicated by the literature (Dittmar *et al.*, 2003; Guney *et al.*, 2003; Ferreira and Vilela, 2004), countries with strong investor protection laws hold less cash. The results of the analysis appears to confirm this assertion.

As indicated by the United Nations (2002) report, the fundamental reasons why Botswana and Egypt had high cash holdings were that the two countries' governments supported the private sector in their progress, and offered protection by which investors also became more secure in doing business or investing in the country. The report also stated that these two countries were highly dominated by diamond mining companies, which offer them high levels of cash as a result of good management. They had also embarked on research and development, which enabled them to anticipate future shocks and therefore reserve more cash towards the future to prevent a negative impact on the economy. The median patterns for the firm specific factors determining the corporate cash holdings of firms across the selected countries are as follows:

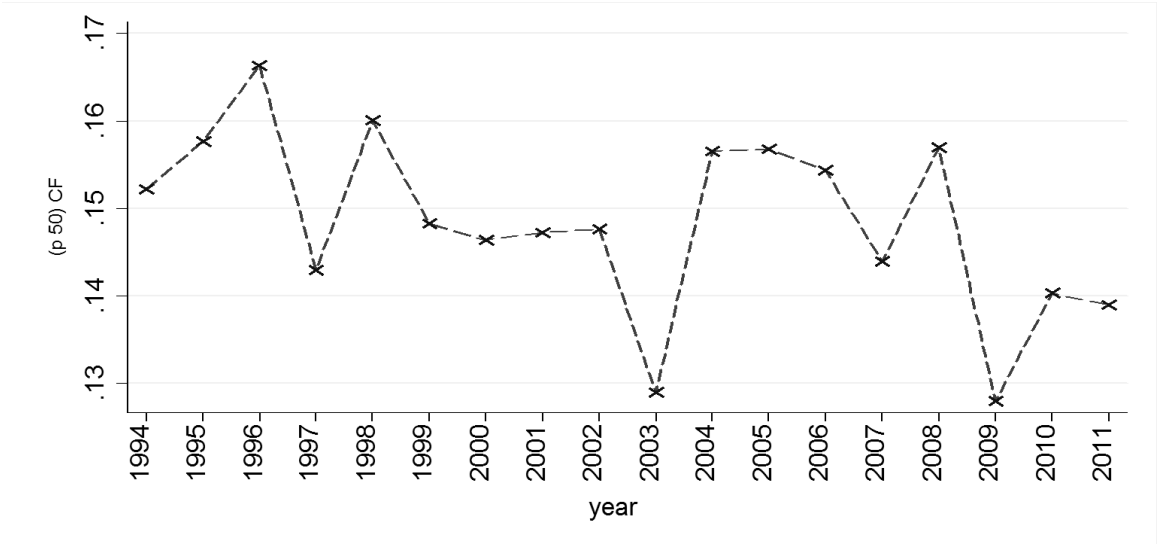
Figure 4.2 Cash holding across firms in the sample



Source: Bloomberg and author's calculation

The pattern in the cash ratio indicated very slight increases and decreases from 1994 to 1999, and 2000 to 2005 respectively, with a decline thereafter. On the whole, 1999 recorded high levels of cash holding amongst the firms under consideration, but the changes look stable.

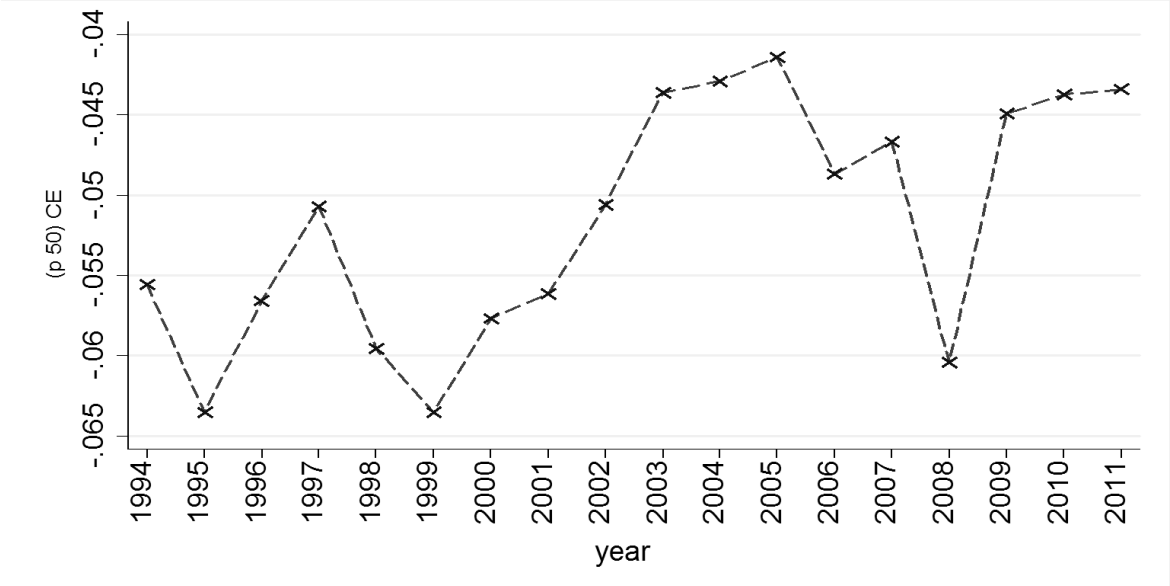
Figure 4.3 Cash flow across firms in the sample



Source: Bloomberg and author's calculation

Median cash flow, as a determinant of cash ratio across firms, indicated both a downward and upward trend over time. There were rapid falls in 2010 and 2011.

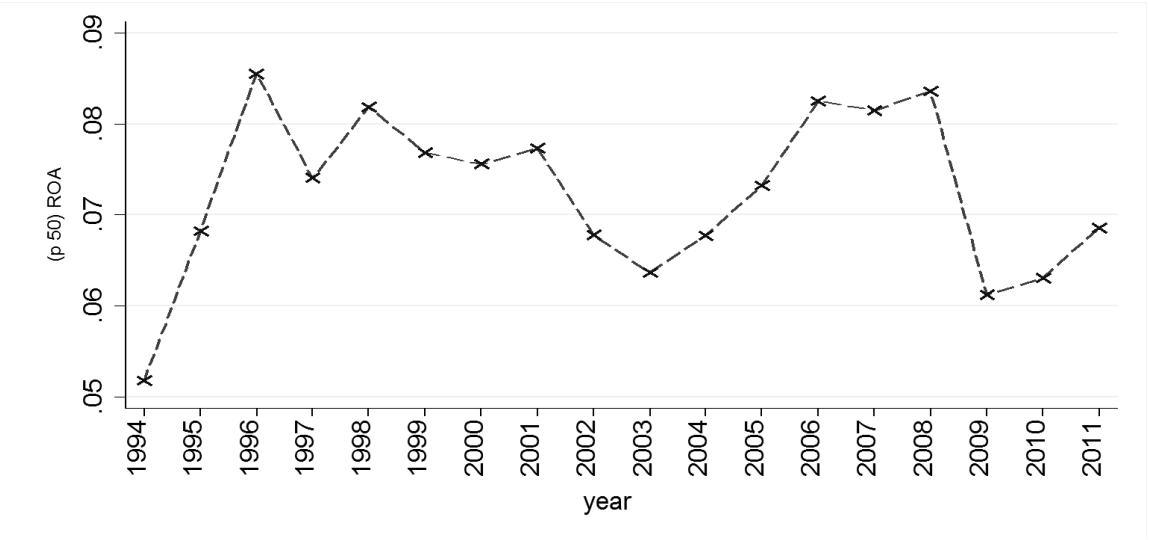
Figure 4.4 Capital expenditure across firms in the sample



Source: Bloomberg and author's calculation

For the capital expenditure, the median trends indicated a long wave of fluctuations, decreasing throughout, but at negative levels for all years.

Figure 4.5 Return on assets across firms in the sample



Source: Bloomberg and author's calculation

The return on assets showed an initial rise between 1994 and 1997. It showed a gradual decline from 1998 to 2003 and rose again from 2004 to 2007, but with a sharp fall from 2008 to 2011.

4.4.2 Determinants of corporate cash holdings

Table 4.4 Summary results of fixed effect and general method of moment (GMM)

.This Table presents a summary of the results of the panel data regression for both the firm and country specific factors, using data from 1994-2011. The firm specific variables are as follows: Corporate cash holding (CASHR), which is the dependent variable, defined as cash and marketable securities to total assets. Market-to-book ratio (MKTBR), measured by the total assets less total equity plus market value of equity to total assets. Financial leverage (LEV), which is the ratio of total debt to total assets. Cash flow (CF), which is the earnings before interest, taxes, depreciation and amortization (EBITDA) to total assets. Net working capital (NWC), defined as the working capital less cash and marketable securities to total assets. Capital expenditure (CE), defined as capital expenditure to total assets. Firm size (SIZE), which refers to the natural logarithm of total assets. Dividend payout (DIV), defined as the dividend payout to total equity. Return on asset (ROA), defined as the net income to total assets. The country specific factors are as follows. Rule of Law (RoL), which is a vector for governance measurement. Gross domestic product at constant price (GDP cons), which is a proxy for measuring economic development. Domestic credit of banks as a percentage to GDP (DCB%GDP), used as a measure of banking development.
All regressions were estimated using panel data estimation, fixed effects and the general method of moments. The superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively. The following tests are also reported: (1) Observation, (2) The Wooldridge test for autocorrelation, which was significant for the first three models and, therefore, the null hypothesis of no serial correlation was rejected (3) The Sargan and Hansen test for over identification restriction, which confirmed the absence of an exogeneity problem (4) The Arellano-Bond test for second order serial correlation, which indicated no serial correlation. The Model 4 (GMM) coefficients were used for interpretation.

Table 4.4 Summary results of fixed effects and gmm (cont.)

Variables	Fixed effect (1)	Fixed effect (2)	Fixed effect (3)	GMM (4)
CASH_lag	-	-	-	0.46***
LEV	-0.13***	-	-0.12***	0.02
MKTBR	-0.00	-	-0.00	-0.00
CF	-0.01	-	0.02	0.12**
NWC	0.00	-	0.00**	0.00
CE	0.17***	-	0.18***	0.21***
SIZE	0.00**	-	0.00*	0.02**
DIV	-0.00	-	-0.00	-0.00
ROA	0.16***		0.17***	0.03
RoL	-	0.02	0.01	0.03
GDP (real GDP)	-	0.00***	.001	.001***
DCB%GDP	-	0.01***	-0.00	0.00
Constant	0.11***	0.13***	0.08***	
Observation.	3778	5146	2921	1691
R-squared:				
Within	0.08	0.00	0.07	-
Between	0.15	0.04	0.16	-
Overall	0.13	0.03	0.14	-
1st Order Cor (AR) 1	0.00	0.00	0.00	0.00
2nd Order Cor (AR) 2	-	-	-	0.15
Sargan of over rest.	-	-	-	0.00
Hansen test of over rest.	-	-	-	0.12

The results show that lag of cash holding (CASH lag), financial leverage (LEV), Cash flow (CF), Capital expenditure (CE), Firm Size (SIZE) and Gross domestic product (GDP) are significantly associated with corporate cash holding. The Model 4 (GMM) coefficients were used for interpretation and the estimated parameters were interpreted, holding all other variables in the model constant.

4.4.2.1 Lag cash holding

From Table 4.4 Model 4, the estimated coefficient of the lagged cash holding was positive and statistically significant at the 1% level for firms in Africa. The coefficient was 0.46, which gives a positive relationship between cash holding and lagged cash holding. The implication is that a unit increase in the firm's previous corporate cash holding increased the current year corporate cash holding by 0.46, holding all other factors constant. The size of the coefficient value in absolute terms was very large, indicating that changes in the lag cash holdings have a greater impact on the current year corporate cash holdings of firms. Empirically, a similar variation is observed in the literature, including Harford *et al.* (2008).They maintained that lag cash explains variation in current cash holdings much better.

This might be the situation of firms in Africa, since the lag cash holding explained the model much better, with significantly positive relationships emerging across the firms. The result is also consistent with the findings of Ozkan and Ozkan (2004), Couderc (2005), Ogundipe *et al.* (2012b), Shah (2011), and Garcia-Teruel and Martinez-Solano (2008), who identified a positive relationship between previous year cash holding and current year cash holding. However, the result is inconsistent with the findings of Bates *et al.* (2009), who found a negative relationship between cash holding and lag cash holding.

4.4.2.2 Cash ratio and financial leverage

The Table provides the regression results, with cash holding as the dependent variable. As indicated in Model 4, the coefficient of financial leverage (proxy for financial distress) was

-0.02 and it was significant at the 1 percent level. Thus, there was a positive correlation between financial leverage and cash holding. The interpretation is that a unit increase in financial leverage increased the cash holding by 0.02, when all other factors were fixed. This The absolute coefficient value showed that financial leverage impacts less on cash holdings. Theoretically, the positive coefficient rejects Hypothesis 1 of a negative relation. The results are consistent with the findings of Ogundipe *et al.* (2012a), Ogundipe *et al.* (2012b), Garcia-Teruel and Martinez-Solano (2008), and Kim *et al.* (2011b) who found that leveraged firms are more likely to hoard cash, due to the higher probability of financial distress. However, it contradicts the findings of Paskelian *et al.* (2010), Shah (2011), Iskandar-Datta and Jia (2012), Opler *et al.* (1999), Kusnadi (2005), Pinkowitz and Williamson (2001), Ozkan and Ozkan (2004), Ferreira and Vilela (2004), and Drobetz and Grüninger (2007)

4.4.2.3 Cash holding and market to book ratio

From Table 4.4 Model 4, the results of the regression analysis for market to book ratio variable, which is a proxy for investment or growth opportunities, produced a negative coefficient of -0.00, but were insignificant in explaining cash holding in Africa, indicating a negative relationship between market to book ratio and cash holding. The insignificant result is consistent with the studies by Jani *et al.* (2004) and Opler *et al.* (1999), who suggested that firms use their internal resources as the first sources of funds, implying low levels of cash. The coefficient therefore supports the Pecking Order theory. The reason for the negative coefficient was also due to the fact that large firms accumulate cash, but their motive is to undertake any investment that comes their way. The negative coefficient could also be possibly due to the fact that lower market value firms do not distribute excess cash (Jani *et*

al., 2004). The relationship is also in keeping with the studies by Pinkowitz and Williamson (2001), Opler *et al.* (1999), Paskelian *et al.* (2010) and Shah (2011).

However, the finding is inconsistent with the studies of Bates *et al.* (2009), Ferreira and Vilela (2004) and Ogundipe *et al.* (2012b), who found a positive significant relationship between cash holding and market to book value.

4.4.2.4 Cash holding and cash flow

The regression analysis from Table 4.4 Model 4 showed that cash flow, which is a proxy for internal source of finance or investment opportunity, produced a positive coefficient of 0.12 and it was statistically significant at the 5% level. The interpretation is that a unit increase in cash flow increased the cash holding by 0.12, when all other factors were fixed. The result showing a positive relationship is in line with previous studies by Bao *et al.* (2012), Ferreira and Vilela (2004), Ferreira and Vilela (2004), Garcia-Teruel and Martinez-Solano (2008), Pinkowitz and Williamson (2001), Couderc (2005), Opler *et al.* (1999), Paskelian *et al.* (2010) and Ogundipe *et al.* (2012a). The positive coefficient of the cash flow supports the Pecking Order theory (hierarchy theory), which suggests that in the presence of information asymmetries firms are interested in and will prefer, using internal sources to finance their operations. This means that firms with greater cash flows will keep high cash holdings. However, the findings contradict that of Ozkan and Ozkan (2004).

4.4.2.5 Cash holding and net working capital

In this study, the regression result for net working capital, which is a proxy for liquid asset, indicated in Table 4.4 Model 4, showed a positive coefficient of 0.00, but was statistically insignificant. Theoretically, the result rejected Hypothesis 6, but it is consistent with, and also confirms, the findings of Bao *et al.* (2012). However, it contradicts previous studies, including D'Mello *et al.* (2008), Ferreira and Vilela (2004), Kim *et al.* (2011a), and Opler *et al.* (1999). The result of a positive coefficient, although not significant, could mean that firms in African countries may not have high value for networking capital and therefore hold more cash, because converting net working to cash could be a problem in terms of delays and low payment for net working capital assets (Uremadu *et al.*, 2012).

4.4.2.6 Cash holding and capital expenditure

Regarding the relationship between cash holding and capital expenditure, which is a proxy for investment or demand for cash, the results of the regressions from Table 4.4 Model 4 show a very significant positive relationship, with significant levels of 1% and a coefficient

of 0.21.This means that an increase in capital expenditure leads to an increase in corporate cash holding. The implication is that a unit increase in capital expenditure increased the cash holding by 0.21, when all other factors were fixed. The absolute coefficient indicated that capital expenditure impacts greatly on cash holdings. This result of a positive relationship rejected Hypothesis 3, but confirms the findings of Kusnadi (2005), and Opler *et al.* (1999).The finding is in support of the Trade-off theory, which indicates that firms with high levels of capital expenditure (spending) should hold more liquid assets (cash). This also means that for firms with expectations of high investments, it is not financially sound to finance their anticipated investments out of operating income, and they therefore need to hold more cash to avoid the high cost of borrowing to undertake their profitable projects (D'Mello *et al.*, 2005).The result, however, is not in line with the findings of Bates *et al.* (2009), Bao *et al.* (2012), Kim *et al.* (2011a), Pinkowitz and Williamson (2001), and Paskelian *et al.* (2010)

4.4.2.7 Cash holding and firm size

From Table 4.4 Model 4 the results of the regression analysis for firm size, which is a proxy for transactional cost, indicated a positive significant relationship at the 5% level, with a coefficient of 0.02. The interpretation is that a unit increase in firm size increased the cash holding by 0.02, when all other factors were fixed. The positive coefficient between the cash holding and size supports the Pecking Order theory, which specifies that larger firms are better positioned to accumulate cash, as they are more profitable Opler *et al.* (1999). However, the findings contradict the results of Bao *et al.* (2012), Drobetz and Grüninger (2007), Ferreira and Vilela (2004), and Kim *et al.* (2011a).

4.4.2.8 Cash holding and dividend payout

Table 4.4 Model 4 indicated a positive, but statistically insignificant, relationship between these two factors. This result implies that dividend payment does not have a relationship with cash holding and that these are both insignificant determinants of cash holding in Africa, which is consistent with the studies of Drobetz and Grüninger (2007), Al-Najjar (2013) and Couderc (2005). However, it contradicts the results from Kim *et al.* (2011a), and Pinkowitz and Williamson (2001).

4.4.2.9 Cash holding and return on assets

The regression analysis from Table 4.4 Model 4 produced a positive coefficient of 0.03, but was statistically not significant. The positive relationship is an indication that an increase in the return on assets will lead to a corresponding increase in cash holdings.

Theoretically, the positive coefficient supported Hypothesis 8. The result is consistent with the findings of Ogundipe *et al.* (2012a), who found that a positive relationship between cash holdings and return on assets

4.4.2.10 Cash holding and rule of law

For the governance issue of rule of law, it was difficult to find previous studies about how country specific factors affect the cash holdings, as very few studies, even in developed countries, have investigated how country specific factors, or a country's legal system and public governance, affect the cash holdings. The result of the regression from Table 4.4 Model 4 indicates positive coefficients, but was statistically insignificant. This means that the rule of law does not affect the cash holdings of firms in Africa. This result contradicts the finding of Ferreira and Vilela (2004), who found a positive and significant relationship, suggesting that countries with investor protection measured by rule of law hold large amounts of cash.

4.4.2.11 GDP Growth and cash holding

The result of the regression analysis gave a positive coefficient of 0.01, indicating a positive relationship. The coefficient, however, very significantly, showed a significance level of 1%. The implication is that a unit increase in gross domestic product increased corporate cash holding by 0.001, all things being equal. This finding contradicts with that of Garcia-Teruel and Martinez-Solano (2008), who found a positive relationship between cash holding and GDP growth, and explained that the reason could be due to the fact that the economy is affected by change.

4.4.2.12 Domestic credit of banks as a percentage of GDP

The regression result for this variable showed a positive but statistically insignificant support of cash holding in Africa. This measures the size of the banking development and credit market and, therefore, the finding indicates that cash holding has nothing to do with the size of the domestic credit of market in Africa

4.5 Conclusion and implications

This study examined the trends and determinants of corporate cash holding across selected African countries. Applying regression analysis and a partial standard adjustment model, the study measured the relationship between the dependent (cash holding) and independent variables, which were leverage, cash flow, net working capital, capital expenditure, firm size, dividend payout, return on asset and market to book value as firm specific factors. The study also considered the relationship between cash holding (dependent) and country specific factors, which were the rule of law, Gross Domestic Product and the domestic credit of banks as a percentage of GDP. The study further analysed the corporate cash holding trends across the selected African countries.

The study found a negative relationship between cash holding and leverage, dividend payout, and market to book value. However, positive relationships were identified between cash holding and cash flow, net working capital, capital expenditure, firm size, return on assets, rule of law, domestic credit of banks and Gross Domestic Product.

In general, the cash flow, firm size, dividend payout, market to book value, Rule of law, domestic credit of banks and Gross Domestic Product were not significant in determining corporate cash holdings in these selected African countries. Moreover, lag cash holding, leverage, net working capital, capital expenditure and return on asset did determine the corporate cash holding in these African countries. Overall, the study found that both the Trade-off and Pecking Order theories play important roles in explaining corporate cash holdings in Africa, but the Pecking Order explained more than the Trade-off.

In conclusion, corporate cash holdings in the selected Africa countries were stable across all years under study, excepting Botswana and Egypt, which had surprisingly higher cash holdings between 1994-1995, but which became stable afterwards. The reasons for this stability was due to the fact that firms in Africa lack research and development expenditures and therefore are not compelled to hold large amounts of cash as preparation against future shocks. The stability is also due to lack of acquisition, which indicates no movement of cash and therefore necessitates the stability of the cash ratio. Furthermore, there are low investment opportunities which does not motivate them to keep more cash. In Botswana and Egypt, the high levels of cash holding were due to the fact that the countries' governments supported the private sector, offered investors protection, and also were dominated by huge diamond mining companies under good management.

The study also concluded that corporate cash holdings are only affected by firm specific factors and not country specific variables, and that the results of these findings are consistent with the literature .Also, the factors that determine cash holdings in these African countries are almost similar to those identified in developed countries. The study confirms and denies some of the findings of earlier researches as well as coming out with very particular ones of its own.

The study also has some implications. Since capital expenditure create new assets for firms and improves collateral security, it increases access to credit (Bates *et al*., 2009). Therefore firms in African countries that have lower capital expenditure encounter a reduced borrowing capacity and therefore they tend to hold more cash. Firms with larger investment opportunities have greater incentives to hold cash, as they suffer higher borrowing costs due to their increased risks of financial distress and bankruptcy.

The results and empirical evidence, also suggest the expansion of the financial sector in African countries to enable firms to obtain finance, and also progress the functioning of trade credit as a short-term financing instrument. This implies that continued expansion of the financial environment by governments in African countries will ease firms' financial constraints and thus boost economic efficiency.

Furthermore, knowledge of the relationship between cash holding levels and firm specific factors will enable investors to become more informed in their decisions about the cash balances held by their investment target. For example, firms having a high return on assets should hold more cash. Low cash holding in such a firm could lead to the firm loosing profitable projects when they arise.

The study will open up discussions of the determinants of corporate cash holding by all firms, especially small and medium scale ones across Africa and what specific factors managers need to be aware of. The results of the study will be useful for when a firm wants to know whether to hold more cash or less cash during for example, a financial crisis or a period of high inflation. It is important for firms to know which factors of their firms will have a positive or negative influence on their cash holdings decisions.

Chapter 5: **Dividends policy across African countries**

ABSTRACT

This chapter firstly provides analysis of the dividend policy and differentials in firm and country specific factors for payers and non-payers of dividends. Secondly, it examines the predictions concerning the amount of dividends paid by listed non-financial firms in African countries. Using a panel dataset of 608 non-financial listed firms from 14 African countries over the period 1994-2011, the study found that dividend payers are more profitable, have larger firm size, greater investment, higher retention of earnings and less financial leverage than non-paying firms. The results show that in countries where the GDP per capita is low, firms are more likely to pay dividends. The level of corruption is high for non-payers of dividends. The results demonstrate that the selected countries rely on both current earnings and past dividends to determine the dividend payment. The study also found a positive significant relationship between dividend payout, profitability, investment opportunities and firm size. However, a significant negative relationship was reported between dividend payout, financial leverage, corruption and gross domestic product per capita. The study further found that the dividend trends were very low and stable, The conclusion, therefore, indicates that although firm specific factors are important in Africa in determining dividend policy regarding payout, country specific factors, such as corruption and the GDP per capita, play very significant roles in determining the dividend payout of African firms.

5.1 Introduction

Baker *et al.* (2001) define dividend policy as the payout policy that managers follow when deciding the size and pattern of cash distributions to shareholders over time. Miller and Modigliani (1961) argue that given perfect capital markets, the dividend decision does not affect firm value and is, therefore, irrelevant. However, subsequent studies have disproved the notion of a perfect capital market and have offered theories about how dividends affect firm value, and how managers should make dividend policy decisions (Baker *et al.*, 2001). For instance, Dhanani (2005) outlined four types of market imperfections, thus rendering Miller and Modigliani's (1961)s' assertion untenable. Dhanani (2005) outlined these imperfections to be: constraints and conditions on capital availability and capital structure, information asymmetry between managers and shareholders, agency problems between managers and shareholders and, finally, differing shareholder circumstances (including different tax statuses).

Many researchers have described the issue of dividend policy as contentious, and, in fact, a puzzle (Black, 1976; Brealey and Myers, 2005). Dividend policy has been described by such researchers as Al-Kuwari (2009), Ahmed and Javid (2008), and Abor and Bokpin (2010) as one of the most intriguing topics in financial research. Al-Kuwari (2009) maintains that even though researchers have paid considerable attention to solving the dividend puzzle, this has resulted in a large number of conflicting hypotheses, theories and explanations.
The current study seeks to examine trends in dividend payout and the differentials in firm and country specific factors for payers and non-payers of dividends. Secondly, it examines the predictions of the amount of dividends paid by listed non-financial firms in Africa taking into account both firm and country factors.

This study was motivated by the fact that most of the research about corporate dividends has been in advanced countries. With the exception of a few studies into corporate dividend payment in individual countries, such as Egypt, Ghana, Nigeria and South Africa, there has not been a single study of dividend payouts decisions in several African countries, also detailing the trends across a time period. This study therefore attempts to look at the issue of corporate dividend policy decision across 14 African countries, including Botswana, Ivory Coast, Egypt, Ghana, Kenya, Morocco, Namibia, Nigeria, South Africa, Tanzania, Uganda, Zambia and Zimbabwe. As the study also looks at the temporary effects (trends) of risks and shocks at specific times, it will therefore provide information for investors regarding the performance of firms in African countries over a period of time, and give a comprehensive understanding of how macro and micro factors impact on dividend policy

decisions. The trends will again provide a clear direction for potential investors, and new entrants as well, and will go a long way to encourage firms and regulators in the individual countries to make decisions about dividend policies, especially when the relationships between the observed variables are taken into consideration. Furthermore, since most African countries have put in place measures to attract direct foreign investment and also encourage investors to invest in existing firms across Africa, this study will serve as basis for research into corporate dividend payout in the African context, which will enable investors to make informed decisions regarding their investments across Africa.

The contributions of this study are that it covers a longer time period (18 years), and include 14 African countries, which the researcher believes to be the first of its kind. It will therefore provide a conclusive statement from the findings regarding the trends in dividend payout. Another important contribution is that the larger number of firms included in the study makes the sample more representative. A further contribution of the study is that it takes into consideration country specific factors in addition to the firm factors, which broadens the limited scope of previously conducted research into dividend payout in individual countries. This study could be used as a stepping stone for future research to help in understanding or explaining in detail how the country specific factors contribute to dividend payout as countries continue to develop.

The paper has been organised into five sections. Section one introduces the area of research. This is followed by the background to the research in Section two. Section three describes the methodology, followed by a discussion of the results in Section four. The conclusions of the paper are presented in Section five.

5.2 Theoretical overview of dividend policy

Al-Malkawi *et al.* (2010) have traced the background of dividend payout policy to the development of the corporate form itself. It was seen that the emergence of a dividend policy as being important to investors was, to some extent, driven by the evolving state of financial markets. Quoting from Frankfurter and Wood (2002), and Baskin (1987), Al-Malkawi *et al.* (2010), stated that investing in shares was initially seen as analogous to investing in bonds, so regularity of payments was important. It was also seen that in the absence of regular and accurate corporate reporting, dividends were often preferred to reinvested earnings, and often even regarded as a better indication of corporate performance than published earnings accounts. However, as financial markets developed and became more efficient, it was thought by some that a dividend policy would become increasingly irrelevant to investors. Why dividend policy should remain so evidently important has been theoretically controversial (Al-Malkawi *et al.*, 2010). Several theories have been developed to explain dividend policy and these are discussed below.

The first of the theories is the Dividend Irrelevance theory propounded by Miller and Modigliani (1961). Basing their argument upon idealistic assumptions of a perfect capital market and rational investors, where there are no differences between taxes on dividends and capital gains, no transaction and flotation costs incurred when securities are traded, all market participants have free and equal access to the same information, no conflicts of interest between managers and security holders, and all participants in the market are price takers, Miller and Modigliani (1961) maintain that dividend policy is irrelevant. The theory explains that in a perfect market dividend policy has no effect on either the price of a firm's stock or its cost of capital. Shareholders' wealth is not affected by the dividend decision and therefore they would be indifferent about whether payment was in the form of dividends or capital gains. Miller and Modigliani (1961) s' main reason was that the wealth of the shareholder is affected by the income generated by the investment decisions made by the firm and not by how it distributes that income. Miller and Modigliani (1961) argued that regardless of how the firm distributes its income, its value is determined by its basic earning power and its investment decisions. They stated that the policy firms decide to adopt over dividend decisions has an impact on the current price of its shares, not total returns to shareholders when investment is known (Miller and Modigliani, 1961). Another theory that was

propounded as a result of the fallout from the Miller and Modigliani (1961) Irrelevant theory is the Information Asymmetry Theory or the Signalling Theory.

Ang (1987), and Al-Malkawi *et al.* (2010) explain the Signalling hypothesis as what occurs when investors can infer information about a firm's future earnings through the signal coming from dividend announcements, both in terms of the stability of, and changes in, dividends. However, for this hypothesis to hold, managers should firstly possess private information about a firm's prospects, and have incentives to convey this information to the market. Secondly, a signal should be true: that is to say, a firm with poor future prospects should not be able to mimic and send false signals to the market by increasing dividend payments. Thus the market must be able to rely on the signal to differentiate amongst firms. If these conditions are fulfilled, the market should react favourably to the announcements of dividend increase and unfavourably otherwise (Ang, 1987).

The main argument of the Agency Cost theory of dividend policy is that because of the imperfect nature of managers, some of whom might have interests which differ from that of the shareholders, they might engage in such activities as consuming excessive perquisites or over-investing in managerially rewarding, but unprofitable, activities. This may lead to high agency costs being incurred by the shareholders. According to this theory, the payment of dividends might serve to align the interests and mitigate the agency problems between managers and shareholders, by reducing the discretionary funds available to managers (Rozeff, 1982; Easterbrook, 1984; Jensen, 1986; Alli *et al.*, 1993). Easterbrook (1984) also argues in the same vein by maintaining that dividends could be used to reduce the free cash flow in the hands of managers and, in addition, oblige managers to approach the capital market to raise funds.

Another explanation offered by Jensen (1986) was that dividend payment will reduce substantially NPV projects. His point was that firms with excess cash flow give managers more flexibility for using funds in a way that benefits themselves, rather than the shareholders. Jensen (1986) argues that extracting the excess funds from the control of management by increasing dividend payment will prevent investment in negative NPV of poor projects. According to this theory and the explanations of Jensen (1986), Easterbrook (1984), and Ali Khan and Ramirez (1993), paying more dividends will reduce the agency costs between managers and shareholders.

A further theory relating to dividend payments is the Clientele Effect theory. Because there is no perfect capital market, investors face different dividend and capital gains tax rates and they therefore have different after-tax valuations for the same asset. Miller and

Modigliani (1961) hypothesized that such differences lead to the formation of what they termed "dividend clienteles", in which investors have tax-based preferences over equities that differ only in their dividend policies. According to Al-Malkawi *et al.* (2010) these clienteles will be attracted to firms that follow dividend policies that best suit their particular situations. Similarly, firms may tend to attract different clienteles by their dividend policies. For example, firms operating in high growth industries that usually pay low (or no) dividends attract a clientele that prefers price appreciation (in the form of capital gains) to dividends. On the other hand, firms that pay a large amount of their earnings as dividends attract a clientele that prefers high dividends.

The Tax-effect hypothesis suggests that low dividend payout ratios lower the cost of capital and increase the stock price. In other words, low dividend payout ratios contribute to maximising a firm's value. According to Al-Malkawi *et al.* (2010), this argument is based on the assumption that dividends are taxed at higher rates than capital gains. In addition, dividends are taxed immediately, whereas taxes on capital gains are deferred until the stock is actually sold. These tax advantages of capital gains over dividends tend to predispose investors who have favourable tax treatment from capital gains to prefer companies that retain most of their earnings rather than pay them out as dividends and they (the investors) are willing to pay a premium for low-payout companies. Therefore, a low dividend payout ratio will lower the cost of equity and increase the stock price (Al-Malkawi *et al.*, 2010).

Another theory offered to explain dividend policy decision is the 'Bird-in-the hand' theory. According to this theory, due to their imperfections and uncertainty, dividends are valued differently from retained earnings or capital gains. According to the theory, investors prefer the "Bird in the hand" of cash dividends rather than the "Two in the bush" of future capital gains (Al-Malkawi *et al.*, 2010). Increasing dividend payments may then be associated with increases in firm value. As a higher current dividend reduces uncertainty about future cash flows, a high payout ratio will reduce the cost of capital, and hence increase share value. According to the so-called "Bird-in-the hand" hypothesis, high dividend payout ratios maximize a firm's value.

The last of the theories considered in this study is the Catering theory, which states that the propensity to pay dividends depends on a dividend premium (or sometimes discount) in stock prices. This theory was formulated by Baker and Wurgler (2004), as a way of relaxing the market efficiency as defence against Miller and Modigliani (1961)s' irrelevance theory. The essence of the Catering theory is that managers give investors what they currently want.

In the case of dividends, catering implied that managers tended to initiate dividends when investors put a relatively high stock price on dividend payers, and tended to omit dividends when investors prefer non-payers. The theory has three basic ingredients. Firstly, it posits a source of uninformed investor demand for firms that pay cash dividends. Secondly, limits on arbitrage allow this demand to affect current share prices. Thirdly, managers rationally weigh the short run benefits of catering to the current mispricing against the long run costs and then make the dividend payment decision.

5.3 Empirical evidence of dividend policy: hypothesis development

5.3.1 Investment opportunities and dividend payout

Abor and Bokpin (2010) maintain that investment opportunities available to a firm constitute an important component of market value, and that it they affect the way the firm is viewed by managers, owners, investors, and creditors. Growth opportunities are also represented by the relative fraction of firm value that is accounted for by assets in place (plant, equipment, and other tangible assets), and that the lower the fraction of firm value represented by assets in place, the higher the growth opportunities (Gul and Kealey, 1999). Existing literature suggests a relationship between investment opportunities and dividend payout. In fact, Gul and Kealey (1999) found a negative relationship between growth options and dividends. Others support the fact that firms with higher market-to-book value tend to have good investment opportunities, and would retain more funds to finance such investment, thus recording lower dividend payout ratios (Rozeff, 1982). Empirical results obtained by Amidu and Abor (2006), Ahmed and Javid (2008), Al-Malkawi (2008) and Abor and Bokpin (2010) also found a negative relationship between investment opportunities and dividend policy. This study therefore hypothesizes that:

Hypothesis 1: Investment opportunities are negatively related to dividend payout.

5.3.2 Profitability and dividend payout

Profits have long been regarded as the primary indicator of a firm's capacity to pay dividends (Amidu and Abor, 2006). Naceur *et al.* (2006) found that highly profitable firms with more stable earnings can manage larger cash flows, and because of this they pay larger dividends. Ahmed and Javid (2008) also maintain that firms with fast growth distribute the larger dividends in order to attract investors. Empirical evidence also attests to these findings. For example, Dickens *et al.* (2002), Amidu and Abor (2006), Abor and Bokpin (2010), Al-Ajmi and Hussain (2011), Turen and Salman (2012), Al-Kuwari (2009) and Kim and Gu (2009) all found a statistically significant and positive relationship between profitability and the dividend payout ratio. Based on both theory and empirical evidence, the study hypothesizes that:

Hypothesis 2: There is a positive relationship between profitability and dividend payout.

5.3.3 Firm size and dividend payout

It has been noted by Jensen *et al.* (1992) and Fama and French (2001) that large firms distribute a higher amount of their net profits as cash dividends, than small firms do. Lloyd *et*

al. (1985) considered size to be an important explanatory variable, and contended that large companies are more likely to increase their dividend payouts in order to decrease agency costs. Over the years, several studies have tested the impact of firm size on the dividend-agency relationship. Fama and French (2002), Al-Kuwari (2009), Al-Malkawi (2008), and Manos (2001) all found a positive relationship between firm size and dividend policy. However, Amidu and Abor (2006) and Ahmed and Javid (2008) found a negative relationship, meaning that large-sized firms prefer to pay a lesser dividend. This study, however, hypothesizes that: *Hypothesis 3: There is a positive relationship between firm size and dividend.*

5.3.4 Financial leverage and dividend payout

The level of financial leverage negatively affects the dividend policy of a firm. This has been confirmed by several studies (Crutchley and Hansen, 1989; Jensen *et al.*, 1992; Agrawal and Jayaraman, 1994; Faccio and Lang, 2002; Al-Malkawi, 2007). These studies made inference to the fact that highly levered firms look forward to maintaining their internal cash flow to fulfil duties, rather than distributing available cash to shareholders and protecting their creditors. The reason they adduced this was because highly levered firms carry a large burden of transaction costs from external financing and, in that case, firms need to maintain their internal source of funds to meet their duties, rather than distributing the available cash to shareholders as dividends. Also, Al-Kuwari (2009) found the leverage ratio to be strongly statistically significant and negatively associated with the dividend payout ratio. The implication of this, according to Al-Kuwari (2009), was that if the leverage ratio of a firm increased, the dividend payout ratio paid by the firm decreased. Based on the above empirical evidence, this study hypothesizes that:

Hypothesis 4: Financial leverage is negatively related with dividend payout.

5.3.5 Country specific factors and dividend payout

Literature regarding the relationship between gross domestic product per capita, corruption and dividend payout is very sparse and, according to the best knowledge of the researcher, this study is the first to consider national factors in addition to factors at the firm level. In addition, this study included corruption levels as a governance indicator and gross domestic product per capita was used to measure economic development. This study hypothesizes that:

Hypothesis 5: Country level factors, such as gross domestic product per capital and corruption, impact negatively on dividend payout of firms across African countries.

5.4 Empirical findings

Table 5.1 Summary variables and definitions

Variables	Label	Definition
Dependent variable:		
Dividend policy	DPY3	Dividend per share divided by total assets
Independent variables:		
Profitability	PROF	Earnings before tax and interest divided by total assets
Financial leverage	FLEV	Total debt divided by total assets
Investment opportunity	INV	Total market value of equity divided by total assets
Firm size	SIZE	Natural logarithm of assets
Corruption	COR	Perception of the extent to which public power is exercised for private gain and others
GDP per capita (log)	lnGDPperca	Log of gross domestic product per capita

5.4.1 Descriptive statistics

Table 5.2 Descriptive statistics of dividend payout decisions

Mean values are reported for the measurement of dividend payout (DPY3), profitability (PROF), investment opportunities (INV), financial leverage (FLEV), firm size (SIZE), gross domestic product per capital (lnGDPper cap), and corruption (COR) over the period 1994-2011. Dividend payout (DPY3) is defined as dividend per share to total assets. Profitability is defined as the ratio of earnings before interest and tax to the book value of total assets. Investment opportunity is measured as the total market value of equity divided by the total assets. Firm size is measured as natural logarithms of total assets. Financial leverage is defined as the total debt divided by total assets. The log of Gross Domestic Product per capita (lnGDPpercap) is a measure of economic development. Corruption (COR) is perception of the extent to which public power is exercised for private gain and others. The table shows the approximate average from the investigated variables across firms during the period 1994-2011.

Variable	Obs	Mean	Std. Dev.	Min	Max
DPY3	5856	0.04	1.56	0	90.94
ln_DPY3	4482	-7.74	2.56	-17.42	4.51
PROF	6668	0.10	0.25	-13.69	1.37
INV	6035	1.54	9.35	-0.46	491.26
FLEV	6800	0.17	0.18	0.00	3.26
SIZE	6901	4.97	2.10	-3.37	22.68
lnGDPperc	10458	6.98	0.90	5.32	8.37
COR	7553	-0.38	0.63	-1.36	1.25

Table 5.2 above describes the descriptive statistics of the dependent and independent variables. The data sample covers 14 African countries over a period of 18 years from 1994-2011. It provides the mean, standard deviation of all the variables used in the study and the number of observations during the sample period. The mean value for dividend payout (dependent) is 0.04, indicating that for the firms across the sample African countries selected for the study, the average dividend payout is 0.04 percent. However, but a variation in the dependent variable across the selected African countries during the period is provided by the standard deviation of 1.56, with a minimum and maximum dividend payout of 0.00 and 90.94 respectively.

The mean investment opportunity is 1.54, with a variation of 9.35 and minimum and maximum values of -0.46 and 491 respectively. All the countries have both positive and

negative investment opportunities. Financial leverage has a mean value of 0.17 and a variation of 0.18, with minimum and maximum values of 0.00 and 3.22 respectively. The profitability set has a mean value of 0.10 and a standard deviation of 0.25, with minimum and maximum values of -13.69 and 1.37 respectively. Firm size has a mean value of 4.97 and a standard deviation of 2.10, with minimum and maximum values of -3.37 and 2.68 respectively. Gross Domestic Product per capita is measured as the log of GDP per capita and has a mean value of 6.98 and variation of 0.90, with minimum and maximum values 5.32 and 8.37 respectively. Corruption shows a mean value of –0.38 and a standard deviation of 0.63, with minimum and maximum values of -1.36 and 1.25 respectively.

Table 5.3 Trends in median dividend payout across African countries in the sample

Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Botswana	-	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Egypt	-	-	0.00	0.00	0.03	0.03	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.03
Ghana	-	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.0	0.00	0.00	0.00	0.01
Ivory C	-	-	-	-	0.02	0.06	0.02	0.04	0.02	0.01	0.02	0.05	0.03	0.01	0.04	0.01	0.01	0.01
Kenya	-	-	-	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.00	0.03	0.00	0.00	0.00
Morocco	0.00	0.00	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.00
Nigeria	-	-	-	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
South A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tanzania	-	-	-	-	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.00	0.00	0.00	0.01	0.00
Tunisia	-	-	-	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.01	0.04	0.00	0.00	0.00	0.01	0.03
Uganda	-	-	-	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Zambia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00
Zimbabwe	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.02	0.01	0.03	0.03	0.00	0.00	0.00	0.02	0.00

Ivory C and South A denotes Ivory Coast and South Africa respectively

From Table 5.3 above, the dividend payout ratios from the selected African countries were very low and stable between 1994-2011. All the countries have a dividend payout ranging from 0 to 0.04. The general pattern of dividend payouts across all the countries under study provides a very low and stable dividend payout for all the countries.

One reason for the low and stable dividend payout policy decision is the fact that agencies monitoring the supply of capital, and correct cash flow for companies are controlled by organisations not under government control, and therefore not properly managed, which again leads to high cost of capital and keeping money for selfish interests, thereby making it impossible for firms to pay high dividend payments to shareholders (Jensen and Meckling, 1976; Xia and Fang, 2005).

Another reason suggested by Chazi *et al.* (2010), Myers and Majluf (1984) and Miller and Rock (1985) is that high financial burdens are faced by firms in Africa, and consequently they prefer to finance a firm's expansion with their low profit margin and retaining earnings which may affect their capability to pay high dividends. Naceur et al (2006) mentioned that that low and stable dividend payout policy in Africa could mean that the firms are not expanding very fast to facilitate high retain earnings to support shareholders, since the available money is used for firm's growth opportunities. Evbayowieru (2011) p. 62 stated that "capital gain seekers welcome low dividend payout policy because of low taxation" and scrip issue benefits". This could be the case in these selected African countries.

Table 5.4 Differentials of payers and non-payers of dividend across the countries

COUNTRY	PROF	INV	FLEV	SIZE	RE
BOTSWANA					
Nonpayers	0.07	1.45	0.00	2.68	0.24
Payers	0.14	1.13	0.06	3.12	0.84
EGYPT					
Nonpayers	0.04	0.86	0.23	4.89	0.32
Payers	0.09	0.82	0.13	4.76	0.50
GHANA					
Nonpayers	0.01	1.08	0.21	2.32	0.39
Payers	0.09	0.93	0.14	3.43	0.53
IVORY_COAST					
Nonpayers	0.02	0.65	0.25	3.88	0.28
Payers	0.10	0.69	0.11	4.54	0.6
KENYA					
Nonpayers	0.04	0.73	0.28	3.01	0.72
Payers	0.09	0.91	0.07	4.03	0.81
MOROCCO					
Nonpayers	0.05	0.94	0.28	4.13	0.28
Payers	0.10	1.15	0.12	4.43	0.54
NIGERIA					
Nonpayers	0.00	0.70	0.18	2.83	0.66
Payers	0.122	1.08	0.06	4.08	0.70
SOUTH_AFRICA					
Nonpayers	0.08	0.91	0.19	5.92	0.51
Payers	0.13	1.15	0.12	6.26	0.75
TANZANIA					
Nonpayers	-	-	-	-	-
Payers	0.26	2.21	0.05	5.30	0.84
TUNISIA					
Nonpayers	0.02	0.77	0.27	4.01	0.43
Payers	0.08	0.88	0.14	3.69	0.51
UGANDA					
Nonpayers	0.03	0.96	0.16	4.67	0.88
Payers	0.14	0.89	0.04	4.67	4.76
ZAMBIA					
Nonpayers	0.11	0.98	0.31	4.59	0.90
Payers	0.16	0.92	0.08		0.96
ZIMBABWE					
Nonpayers	0.02	1.02	0.07	4.44	0.89
Payers	0.18	1.46	0.07	6.01	0.97

Table 5.4 above describes the median values of the differentials of payers and non-payers of dividend. Profitability (PROF) is defined as the ratio of earnings before interest and tax to the book value of total assets. Investment opportunities (INV) are measured as the total market value of equity divided by the total assets. Financial leverage (FLEV) is measured as the total debt to total assets. Firm size (SIZE) is measured as the natural log of total assets. Retained earnings (RE) are measured as the ratio of retained earnings to total equity.

Consistent with Fama and French (2001) and Denis and Osobov (2008), firms across the countries indicated that payers of dividends tended to have more profit margins and a larger firm size, with only Tunisia and Zambia having smaller firm sizes. Firm size was not homogenous across all countries, but it appeared that larger firms tended to pay more dividends. This is an indication that payers and non-payers of dividends differ in terms of firm size.

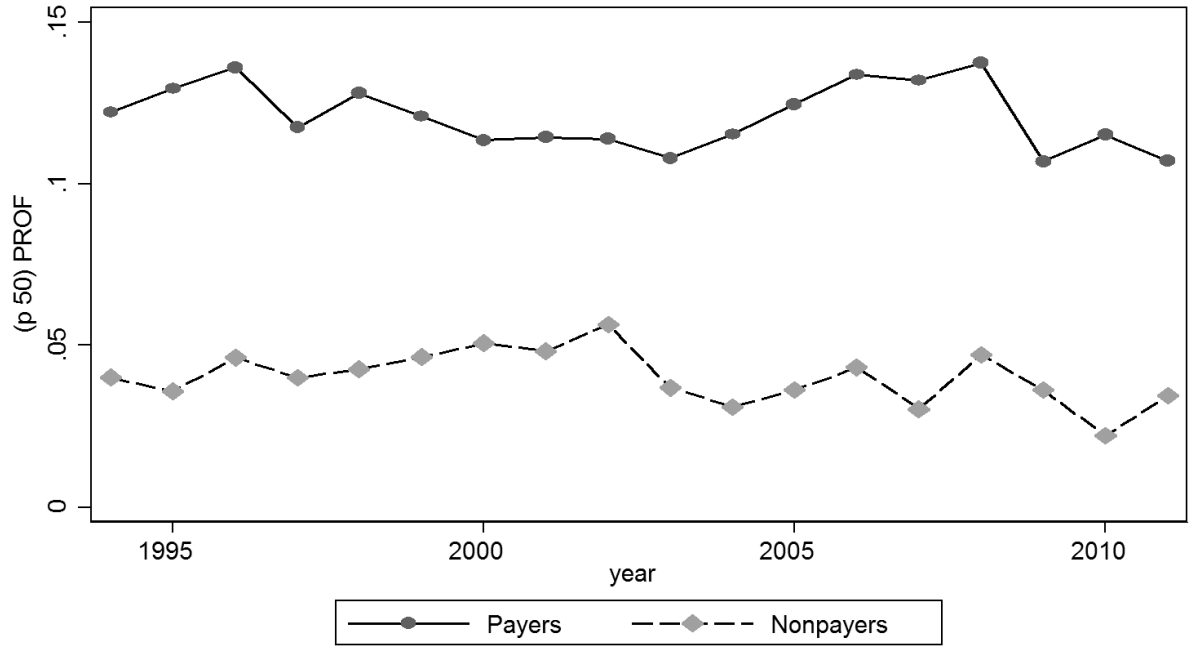
The association established between dividend payments and investment opportunities was not the same across the countries. Botswana, Egypt, Ghana, Uganda and Zambia had lower values for investment opportunities. Ivory Coast, Kenya, Morocco, Nigeria, South Africa, Tunisia and Zimbabwe had higher values for investment opportunities. Looking at the investment outcome, it can be considered that payers of dividends tended to have higher values for investments. The results are consistent with the findings by La Porta *et al.* (2000), cited in Denis and Osobov (2008). It was also found that dividend payers had higher retained earnings than non-paying dividend firms, which is in line with findings by Denis and Osobov (2008). A payer of dividends tended to have low financial leverage, whilst non-payers tended to have more leverage across the selected countries, with the exception of Botswana, which had lower leverage.

Table 5.5 Median differentials values of payers and non-payers of dividend payout across firms 1994-2011

Variables	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
PROF																		
Non Payers	0.04	0.04	0.04	0.04	0.04	0.04	0.05	0.05	0.06	0.04	0.03	0.04	0.04	0.03	0.05	0.04	0.02	0.03
Payers	0.12	0.12	0.13	0.11	0.12	0.12	0.11	0.11	0.11	0.11	0.12	0.12	0.13	0.13	0.14	0.11	0.12	0.11
INV																		
Non Payers	2.24	1.29	1.54	0.83	0.89	0.69	0.74	0.73	0.72	0.77	0.92	0.99	1.16	1.16	1.06	0.98	0.81	0.85
Payers	1.11	1.12	1.15	1.21	1.04	0.94	0.89	0.76	0.72	0.82	0.95	1.09	1.23	1.53	1.25	1.11	1.20	1.02
FLEV																		
Non Payers	0.23	0.21	0.15	0.13	0.15	0.23	0.24	0.25	0.28	0.27	0.22	0.13	0.19	0.15	0.11	0.16	0.18	0.13
Payers	0.09	0.09	0.09	0.11	0.10	0.12	0.11	0.12	0.11	0.11	0.11	0.11	0.11	0.12	0.13	0.13	0.11	0.11
SIZE																		
Non Payers	5.09	3.28	4.26	4.58	4.23	4.17	3.99	4.15	4.42	4.03	3.61	3.71	4.09	4.24	4.42	4.52	4.41	4.46
Payers	5.32	5.39	5.12	5.19	5.02	4.90	4.83	4.73	4.70	4.97	4.86	4.95	4.97	5.17	5.23	5.14	5.39	5.54
COR																		
Non Payers	-0.76	-0.65	-0.03	-0.29	-0.47	-0.23	-0.52	-0.66	-0.57	-0.71	-0.31	-0.56	-0.26	-	-	-	-	-
Payers	-0.07	-0.25	-0.39	-0.29	-0.47	-0.54	-0.52	-0.66	-0.67	-0.71	-0.43	-0.56	-0.68	-	-	-	-	-
lnGDPper																		
Non Payers	7.98	7.99	8.01	8.02	7.99	7.99	7.29	7.31	7.32	7.33	7.32	6.09	7.39	7.45	7.53	7.56	7.52	7.55
Payers	7.10	7.03	7.13	7.09	7.15	7.15	7.15	7.21	7.23	7.28	7.32	7.33	7.39	7.41	7.46	7.49	7.52	7.55

Table 5.5 above describes the time trends of both payers and non-payers of dividends. Over the time period of the study, dividend payers have a higher level of profitability, ranging from 0.11 to 0.13, than non-payers of dividends, which ranged between 0.03 to 0.06. The gap between the profit margins for payers and non-payers was wide, which is consistent with Fama and French (2001). Investment opportunities differed across both payers and non-payers of dividends, but it appears that payers of dividends tended to have more investment opportunities than non-payers. The range for payers was 0.82 to 1.53 and for non-payers 0.73 to 2.24 across the years respectively. Financial leverage showed that non-payers of dividends had high-level leverage, ranging from 0.13 to 0.28, whilst payers had low level leverage, ranging from 0.10 to 0.13 over the timespan. With firm size, dividends payers were larger organisations than non-payers. The range was between 4 to 6 and 3 to 5 respectively. The findings are in line with Fama and French (2001). Payers of dividends had less gross domestic product per capita and lower levels corruption, whilst non-payers had high-levels respectively.

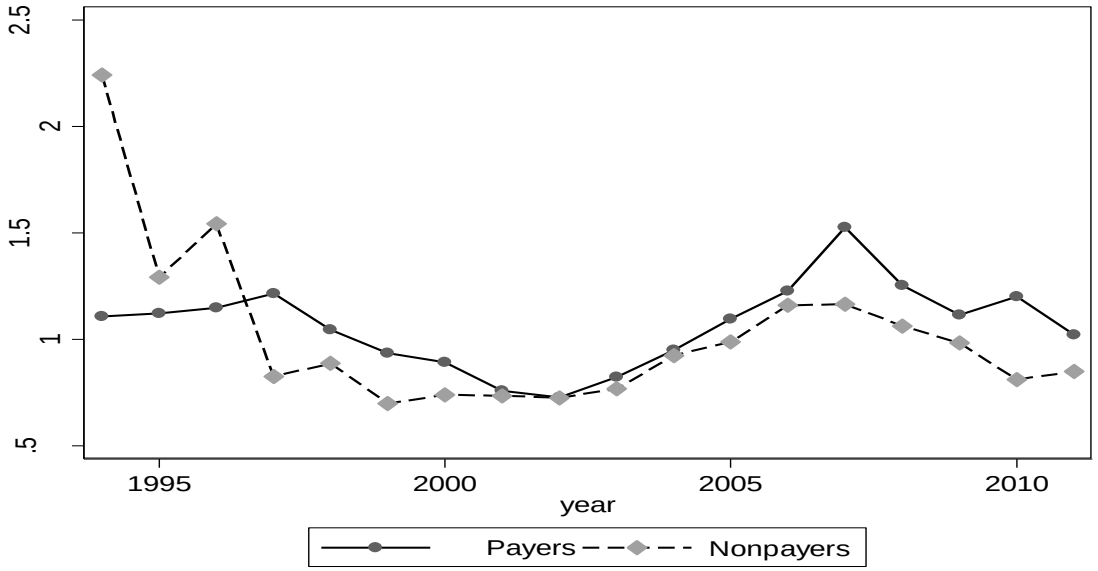
Figure 5.1 Differentials in median profitability of payers and non-payers across firms



Source: Bloomberg and author's calculation

Figure 5.1 illustrates how payers of dividends had higher levels of profitability than non-payers across the firms.

Figure 5.2 Differentials in median investment for payers and non-payers across firms



Source: Bloomberg and authors calculation

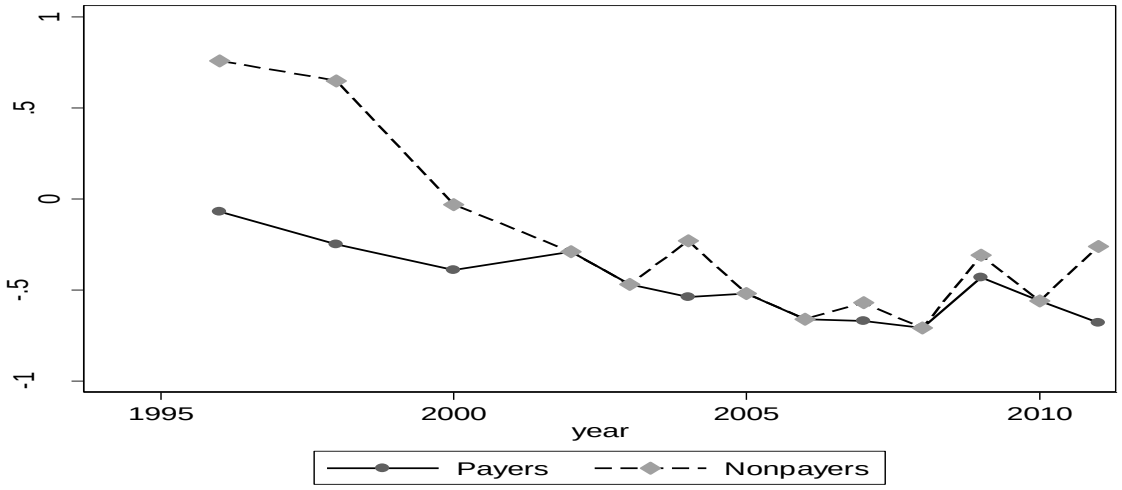
Figure 5.2 shows how investment opportunities differed for payers and non-payers, and therefore with mixed results.

Figure 5.3 Differentials in median firm size of payers and non-payers across firms

Source: Bloomberg and authors calculation

Figure 5.3 illustrates how dividends payers had a larger firm size than non-payers during the period 1994-2011.

Figure 5.4 Differentials in median corruption of payers and non-payers across firms



Source: Bloomberg and author's calculation

Figure 5.4 depicts how non-payers of dividends were highly corrupt, although corruption levels across the firms dropped considerably during the period 1994-2011.

Table 5.6 Pair wise correlation matrix coefficient between selected variables

Pair wise correlation coefficient estimated on a sample of 608 firms across 14 African countries during the period 1994-2011.* indicates significance: Profitability (PROF) is defined as the ratio of earnings before interest and tax to the book value of total assets; Investment opportunity (INV) is measured as the total market value of equity divided by the total assets; Firm size (SIZE) is measured as a natural logarithms of total assets; Gross Domestic Product per capital is measured as the log of GDP per capita (lnGDPPc). Financial leverage (FLEV) is defined as total debt divided by total assets. Corruption (COR) and rule of law (ROL) are vectors of governance indicators.

Variables	DPY3	PROF	INV	FLEV	SIZE	lnGDP	COR	GDP	ROL
DPY3	1.00								
PROF	0.01	1.00							
INV	0.86*	0.04*	1.00						
FLEV	-0.01	-0.08*	0.01	1.00					
SIZE	-0.06*	0.17*	-0.10*	0.07*	1.00				
lnGDPPc	-0.00	0.03*	-0.02	-0.01	0.36*	1.00			
COR	-0.00	0.04*	-0.03*	0.03*	0.30*	0.80*	1.00		
GDPcons	-0.03*	0.10*	-0.03*	-0.00	0.44*	0.68*	0.38*	1.00	
RoL	-0.01	0.03*	-0.05*	-0.00	0.28*	0.80*	0.88	0.42*	1.00

Source: Datastream, World Bank Development Indicators, Bloomberg and Author's calculation

5.4.2 Determinants of dividend policy

Table 5.7 Summary results of fixed effect and general method of moment

This table presents a summary of the regression results for both the firm and country specific factors using data from 1994-2011. Dividend policy (DPY3) is defined as dividend per share to total assets. Profitability is defined as the ratio of earnings before interest and tax to the book value of total assets. Investment opportunity is measured as the total market value of equity divided by the total assets. Firm size is measured as natural logarithms of total assets. Financial leverage is defined as the total debt divided by total assets. The log of Gross Domestic Product per capita (lnGDPPc) is a measure of economic development. Corruption (COR) is a vector for governance indicator. All regressions were estimated using panel data estimation, fixed effects and the general method of moments. The superscripts ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively. The following tests are also reported: (1) Observation, (2) The Wooldridge test for autocorrelation, which was significant for the first two models and, therefore, the null hypothesis of no serial correlation was rejected (3) The Sargan and Hansen test for over identification restriction, which confirmed the absence of an exogeneity problem (4) The Arellano-Bond test for second order serial correlation, which indicated no serial correlation. The Model 4 coefficients were used for interpretation. FE denotes fixed effect

Variable	**FE (1)**	**FE.(2)**	**FE.(3)**	**FE (4)**	**GMM(5)**
DPY3					
Lag_DPY3	-	-	-	-	-0.08
PROF	0.25***	0.24***	-	0.20*	0.01
INV	0.09***	0.09***	-	0.09***	-0.01
FLEV	-	-0.01*	-	-0.17***	-0.02
SIZE	-	-0.01	-	0.04	-0.01
COR	-	-	-0.29**	-0.07*	0.01
lnGDPPc(log)	-	-	-0.06	-0.23***	0.01
Constant	-0.15***	-0.13***	0.53	1.45***	
Observation	5208	5165	4581	4087	2432
R-squared:					
Within	0.78	0.78	0.00	0.77	-
Between	0.60	0.60	0.00	0.68	-
Overall	0.75	0.75	0.00	0.73	-
AR (1)	0.08	0.08	0.00	0.14	0.18
AR (2)	-	-	-	-	0.54
Sargan test over rest.	-	-	-	-	0.00
Hansen test over rest.	-	-	-	-	0.07

The results show that Profitability (PROF), Investment opportunities (INV), Financial leverage (FLEV), Corruption (COR) and Log of gross domestic product per capita (lnGDPPc) are significantly associated with corporate dividend policy. Model 4 coefficients were used for interpretation, since the results showed an R-squared value of 0.73 and the first order test of autocorrelation proved insignificant, indicating that the model was appropriate. The estimated parameters were interpreted holding all other variables in the model constan

5.4.2.1 Profitability and dividend payout

From Table 5.7, Model 4 provided the regression results, with dividend payout as the dependent variable. The coefficient of profitability was 0.20 and was statistically significant at the 10% level, implying that firms with profit will have more dividend payout policies, which supports this study's prediction of a positive relationship between profitability and dividend payout. The interpretation is that a unit increase in profitability increased the dividend by 0.20, when all other factors were fixed. Empirically, the positive findings are in line with Fama and French (2002), Al-Kuwari (2009) and Al-Malkawi (2008), who maintain that firms with less investment, but high profit, are more likely to pay high dividends. However, the results contradict the findings by Abor and Bokpin (2010), that firms with high profits tend to pay lower dividends, as they may keep their retained earnings in order to finance future growth and investment opportunities..

5.4.2.2 Investment and dividend payout

From Table 5.7 Model 4, the results of the regression analysis for the investment opportunities variable produced a positive coefficient of 0.09, at the significant level of 1%, implying that high investment opportunities in African countries would have more impact on dividend payments. The implication is that a unit increase in investment increased the dividend by 0.09, when all other factors were fixed. In absolute terms, the coefficient value has less impact on dividend payout. Theoretically, the positive significant relationship between investment opportunities and dividend payout signified that an increase in investment increases the dividend payout. The positive result rejects Hypothesis 1 of a negative relationship between investment opportunities and dividend payout, but is consistent with the study of Fama and French (2002), who argue that firms with more investments tend to have lower dividend payouts in the long term. However, the result is not in line with the findings of Abor and Bokpin (2010), Amidu and Abor (2006), Ahmed and Javid (2008) and Al-Malkawi (2008)

5.4.2.3 Financial leverage and dividend payout

The regression analysis from Table 5.7 Model 4 showed that financial leverage produced negative coefficients of -0.17 at the significant level of 1%, meaning that firms in African countries with high financial leverage will have a significant reduction in dividend payout. The interpretation is that a unit increase in financial leverage decreased the dividend by 0.17, when all other factors were fixed. The impact of financial leverage on dividend policy decision is very high, since the magnitude of the absolute value of the coefficient is large.

Theoretically, the result, showing a strong negative relationship, supports this study's predictions of a negative relationship between financial leverage and dividend payout (Hypothesis 4), which means levered firms are less likely to pursue dividend payment. The result is in line with previous studies by Jensen *et al.* (1992) and Al-Malkawi (2007). They maintained that highly levered firms look forward to maintaining their internal cash flow to fulfil duties, rather than distributing available cash to shareholders and protecting their creditors. Fama and French (2002) again found a negative relationship between leverage and dividend payout. Al-Kuwari (2009) also found a negative leverage ratio, with the implication that if the leverage ratio of a firm increases, the dividend payout ratio paid by the firm decreases. The results confirm previous studies and support the hypothesis.

5.4.2.4 Firm size and dividend payout

In this study, the regression result for firm size, indicated in Table 5.7 Model 4, showed a coefficient of 0.04 but statistically insignificant. The established relationship demonstrated a direct relationship between firm size and dividend payout, which strongly provided theoretical support for Hypothesis 3, of a positive relationship between firm size and dividend payout, suggesting that diversifications of firms will lead to high dividend payout. Theoretically, the result is consistent with, and also confirms, the findings of Fama and French (2002), Al-Kuwari (2009), Al-Malkawi (2008), Manos (2001) and Jensen *et al.* (1992), who emphasized that large firms distribute a higher amount of their net profits as cash dividends, than do small firms. The results, however, are not in line with the studies of Amidu and Abor (2006), and Ahmed and Javid (2008), who found a negative relationship. The results are in line with the established Hypothesis 3, which supports previous findings

5.4.2.5 Corruption and dividend payout

For the governance issue of corruption, it was difficult to find previous studies about how country specific factors affect the dividend payout. The results of the regression from Table 5.7 Model 4 indicated negative coefficients of -0.07 at the significant level of 10%, which supported Hypothesis 5, of a negative relationship between corruption level and dividend payout, and indicated that African countries with high levels of corruption will impact inversely on dividend payment. The implication is that a unit increase in the corruption index decreased the dividend by -0.07, when all other factors were held constant. The magnitude of the coefficient shows that corruption has a larger impact on dividend payment. The results indicated that firm experiencing high corruption tend to have low dividend payout. This means that corruption, as a vector for government indicators, did affect the dividend payouts

of firms in Africa. This may imply that corruption levels in African countries affected the firms' ability to pay dividends, hence, the higher the corruption level, the lower the dividend payout. The findings support the established hypothesis

5.4.2.6 Log of GDP per capita and dividends payout

From Table 5.7 Model 4, the results of the regression analysis gave a negative significant relationship between dividend payout and log of gross domestic product per capita, with coefficients of -0.23 at the significant level of 1%, indicating that the higher the GDP per capita, the lower the dividend payout. The interpretation is that a unit increase in the log of GDP per capita (measured in US$) decreased the dividend payout by 0.23, all other things being constant. The absolute coefficient demonstrated that log GDP per capita impacted strongly on dividend payout when compared with the firm factors. This finding contradicts that of Abor and Bokpin (2010), who found no established relationship. The negative significance implies that, in a country where GDP per capita is high, shareholders are less likely to consider or expect dividend payments. The results confirm the hypothesis of a negative relationship between GDP per capital and dividend payout.

5.5 Conclusion and implications

This study examined the trends in dividend payout and differentials in firm and country level specific factors for payers and non-payers of dividends. The study also examined the predictions of the amount of dividends paid by listed non-financial firms in Africa. Applying regression analysis and a partial standard adjustment model (dynamic panel regression), the study measured the relationship between the dependent (dividend payout) and independent variables, which were profitability, investment opportunities, financial leverage, and firm size as firm specific factors. The study also considered the relationship between dividend payout (dependent) and country specific factors, which were corruption and Gross Domestic Product per capita.

The study found that dividend payers were more profitable, had larger firm size, more investment, high retaining earnings and less financial leverage than non-paying firms. The findings also show that in countries where GDP per capita is low, firms were more likely to pay dividends. Corruption was highly associated with non-payers of dividends.

The study also found a positive relationship between dividend payout and investment opportunities, firm size and lagged of dividend. However, negative relationships were identified between dividend payout and financial leverage, profitability, corruption and gross domestic product per capita. Profitability was positive and significant when only firm factors were regressed, but became negative when both firm and country factors were regressed together.

In general, lag dividend payout, profitability, investment opportunities, financial leverage, firm size, corruption and Gross Domestic Product per capita were the significant determinants of dividend payout in these selected African countries at levels of 1%, 5% and 10%. The findings indicated that the hypotheses or the predictions stated are applicable and explained dividend policy decisions in the context of African countries.

In conclusion, dividend payout in the selected Africa countries was stable across the time period under study, with the exception of Ivory Coast, which had surprisingly high dividend payouts. Because the selected countries were mixed with high and low incomes, high and low populations and war and non-war countries, the data length provided comprehensive understanding regarded policy decisions for the countries. The study also

concluded that dividend payout is affected by firm and country specific factors, and that the results of the findings are consistent with the literature about firm specific factors.

This current study has shed light on the significance of profitability, investment opportunities, financial leverage, and firm size as firm specific factors, and corruption and Gross Domestic Product per capital as country-specific factors, in explaining the dividend payout policy of firms in Africa. These findings suggest that large and profitable firms with higher investment opportunities would retain adequate financing for future investments as long as such investment projects yielded positive net present values. However, profitable firms that operate in countries where corruption is high tend to pay lower dividends.

One implication of these findings is that pro-growth policies generate more profitable investment opportunities and stimulate the financing needs of the corporations, which leads the firms to distribute less and use the retained earnings for expanding the corporations. Therefore, large sized firms with more profitable investment opportunities want to rely less on external financing and more on retained earnings. The study will again provide information to managers, financial consultants and the state with regard to the distribution of dividends, and ways to attract foreign investors across these African countries.

The implications of dividend policy have been discussed in relation to the development of the stock market of a country. This is also directly related to the stock value of a firm. According to the Bird-in-hand hypothesis of dividend policy, firms that pay high dividends increase stock value (Al-Malkawi *et al.*, 2010). That is to say, according to the so called "Bird-in-the hand" hypothesis, high dividend payout ratios maximize a firm's value. Studies that provide support for the "Bird-in-the hand" include Gordon and Shapiro (1956) and Lintner (1956). Fisher (1961) also used data from Britain for the period between 1949 and 1957 to conclude that dividends have greater impact on share prices than retained earnings.

Another hypothesis that strictly contradicts the "Bird-in-the hand" is the Tax-effect hypothesis. According to this hypothesis, low dividend payout ratios lower the cost of capital and increase the stock price. In other words, low dividend payout ratios contribute to maximising the firm's value. According to Al-Malkawi *et al.* (2010), this argument is based on the assumption that dividends are taxed at higher rates than capital gains. In addition, dividends are taxed immediately, while taxes on capital gains are deferred until the stock is actually sold. These tax advantages of capital gains over dividends tend to predispose investors, who have favourable tax treatment with capital gains, to prefer companies that

retain most of their earnings, rather than pay them out as dividends, and are willing to pay a premium for low-payout companies. Therefore, a low dividend payout ratio will lower the cost of equity and increase the stock price.

What is the implication of high firm value and high share price? The significance can be traced to its impact on the stock market. Once many firms with high value and higher prices are listed on the stock market, it signals a stronger and more robust stock market that will attract many more investments. It is also a known and established fact that stock markets relate positively to economic development of any country (Antonios, 2010). For example, according to Pagano (1993), stock markets contribute to the mobilization of domestic savings by enhancing the set of financial instruments available to savers to diversify their portfolios, providing an important source of investment capital at relatively low cost. He maintains that a well-functioning and liquid stock market, that allows investors to diversify away from unsystematic risk, will increase the marginal productivity of capital (Pagano, 1993). Antonios (2010) argues that rising share prices tend to be associated with increased business investment and vice versa and, also, share prices also affect the wealth of households and their consumption. Higher household consumption also engenders economic growth, if the consumption is of locally produced commodities.

According to Obstfeld (1994), another important aspect through which stock market development may influence economic growth is risk diversification. Obstfeld (1994) suggests that international risk sharing, through internationally integrated stock markets, improves the allocation of resources and accelerates the process of economic growth.

Furthermore, the evolution of stock markets, according to Khan and Sendahji (2000), has an impact on the operation of banking institutions and, hence, on economic promotion. This means that stock markets are becoming more crucial, especially in a number of emerging markets and their role should not be ignored (Khan and Sendahji, 2000). Levine and Zervos (1998) argued that a well-established stock market not only can mobilize capital and diversify risks between market agents, but it is also able to provide different types of financial services than the banking sector to stimulate economic growth.

Chapter 6: **Conclusion**

6.1 Overview

The focus of this thesis was on the capital structure, corporate cash holding, and dividend policy of listed non-financial firms in African countries. This has become necessary since firm growth, high profitability and, consequently, an efficient finance system and economic growth and development, can only be achieved when investors have a firm grasp and understanding of capital structure dynamics, corporate cash holding determinants, and are convinced about dividend policy. This last chapter offers general conclusions for each of the three main chapters. It provides the contributions of each chapter to the previous studies, discusses the limitations of the methodology and techniques used, provides the policy implications of this study and, finally, identifies areas for further research.

6.2 Chapter Three: Capital structure trends in selected Africa countries

Chapter Three was the first part of the thesis and contains an empirical examination of leverage trends (capital structure), and the independent effects of governance, banking and economic development (country factors) and firm level factors on capital structure in Africa. The chapter, therefore, measures the relationship between leverage, firm factors (investment opportunities, profitability, non-debt tax shield, firm size and target pay out) and country specific factors (gross domestic product, domestic credit of banks, corruption and the rule of law). Capital structure is necessary for the growth of firms and economic development. Capital structure has been defined as the mix of securities and financing sources used by firms to finance real investment (Myers 2001). Ever since the 'irrelevance' propositions by Modigliani and Miller (1958), interest in studies about capital structure has grown, with many divergent views reported about the relationships between the characteristics of firms, such as profitability, tangibility, firm size, investment opportunities, the non-debt tax shield and target pay out, as determinants of leverage.

Employing a panel dataset of 608 non-financial listed firms from 14 selected African countries (covering the period from 1994-2011), this chapter showed a positive relationship between leverage, investment opportunities, non-debt tax shield, firm size, the domestic credit of banks, and the rule of law. However, a negative relationship was established between leverage, profitability, target pay out, gross domestic product and corruption levels. The study found that lagged leverage, investment opportunities, profitability, firm size, domestic credit of banks, gross domestic product, corruption and the rule of law were significant in determining the capital structure of firms in the selected African countries. The study also found that the leverage trends across the countries under examination were very

low and stable. The conclusion, therefore, indicates that although firm specific factors are important in Africa in determining leverage, country specific factors, such as the institutional environment and governance, play a very significant role in determining the level of leverage. The signs of these relationships suggest that the Pecking Order and Trade-off theories of capital structure models, derived from the developed countries, provide help in explaining the financial behaviour of firms in African countries, and that the results are in line with previous studies. The key implications from the findings are that managers should understand the relationship between leverage and firm factors in managing their businesses to increase productivity, leading to economic development and growth. Also, strengthening governance and other institutions by policy makers will invariably have a positive effect on business and industry.

6.3 Chapter Four: Corporate cash holdings in African countries

Chapter Four examined the trends in corporate cash holdings. It also empirically analysed the impact of firm and country level factors (rule of law, gross domestic product and domestic credit of banks) on cash holdings. The study found stable trends in cash holdings, the reasons for which were due to the fact that firms in Africa lacked research and development expenditures and, therefore, were not compelled to hold large amounts of cash as preparation against future shocks. They were also due to lack of acquisition, which indicated no movement of cash, which necessitated stability. Furthermore, applying regression analysis and a partial standard adjustment model using fixed effects and the application of a generalised method of moments models, the study measured the relationship between the cash holdings, and firm and country specific factors. The study found a positive relationship between cash flow, net working capital, capital expenditure, firm size, return on asset, rule of law, gross domestic product and the domestic credit of banks. However, a negative relationship was reported between leverage, market to book ratio and cash holding. The results provided evidence that cash holdings in these selected countries were significantly determined by net working capital, capital expenditure, return on asset and financial leverage. Firms with financial leverage tended to hold less cash. Firms with capital expenditure, net working capital and return on asset held large amounts of cash. The results of the coefficients suggested that both the Trade-off and Pecking Order theories were applicable for explaining differentials in cash holdings in firm factors in African countries, but they were more supportive of the Pecking Order theory. The results from the analysis support previous studies. The conclusions, therefore, indicate that firm specific factors are important in Africa

in determining corporate cash holding, while country specific factors are insignificant. The results suggest that the expansion of the financial sectors will enable firms to obtain finance, and also progress the functioning of trade credit as a short-term financing instrument, which implies that the continued expansion of the financial environment by governments in Africa countries will ease firms' financing constraints, and thus boost economic efficiency. Also, the result is useful to firms for knowing whether to hold less, or more, cash during a financial crisis or period of high inflation.

6.4 Chapter Five: Dividends policy across African countries

Chapter Five of this thesis examined the trends in dividend policy and differentials in firm and country specific factors for payers and non-payers of dividends. Secondly, it examined the predictions concerning the amount of dividends paid by listed non-financial firms in African countries. Using a panel dataset of 608 listed non-financial firms in African countries covering the period 1994-2011 and employing fixed effects and applying a generalised method of moments models, the study found that dividend payers were more profitable, had larger firm sizes, greater investment, high retention of earnings and less financial leverage than non-dividend paying firms. The results also showed that in countries where the gross domestic product per capita is low, firms are more likely to pay dividends. The level of corruption was high for non-payers of dividends. The results demonstrated that the selected countries relied on both current earnings and past dividends to determine the dividend payment. The study further found a positive significant relationship between dividend policy, profitability, investment opportunities and firm size. However, a significant negative relationship was identified between dividend policy, financial leverage, corruption and gross domestic product per capita. The study further found that the dividend trends across the countries under examination were very low and stable. The reasons for this were that financial burdens were faced by firms in Africa, and consequently they preferred to finance a firm's expansion with their low profit and by retaining earnings, which may have affected their capability to pay high dividends. It was also due to the fact that firms were not expanding very fast in Africa to facilitate earnings to support shareholders, since the available money was used for the firm's growth opportunities. The conclusion, therefore, indicates that although firm specific factors are important in Africa in determining dividend policy regarding payout, country specific factors, such as corruption and the GDP per capita, play very significant roles in determining the dividend payout of African firms.

6.5 Summary and public policy implications

This study has contributed to the advancement of research into capital structure, corporate cash holdings and dividend policy of firms, and their implications. The study employed a large panel dataset of 608 firms sampled from 14 African countries covering a period from 1994-2011. Time was spent collecting data about both firm factors and country-level (governance and development indicators) secondary data, to assess their impact on capital structure, corporate cash holdings and dividend policy in African countries. Following Fama and French (2002) and Bates *et al.* (2009) s' approach, panel data regression models were developed to measure the impact of the firm and country specific factors on capital structure, cash holdings and dividend policy. In the estimation, the following regressions models were used: fixed effect and the application of the general method of moments (GMM). Although the thesis focused on African countries' non- listed firms finance, and how the firms operated regarding their capital structure, cash holdings and dividend decisions as well as investment, its benefits could be extended to other emerging, developing and developed countries.

The findings from the thesis are summarised as follows: Firstly, from the capital structure, the leverage trends across the selected African countries under examination were very low and stable. Country and firm specific factors play a significant role in determining the level of leverage. Secondly, corporate cash holdings in the countries are significantly determined by leverage, net working capital, capital expenditure, and return on asset and, therefore, firm specific factors are important determinants of cash holdings, implying that corporate cash holding is a firm's internal decision. Thirdly, dividend payers are more profitable, have larger firm size, greater investment, high retention of earnings and less financial leverage than non-paying firms. In countries where GDP is low, firms are likely to pay dividends and non-payers of dividends have high levels of corruption. Country and firm factors are significant in determining dividend.

The thesis therefore provides the following public policy recommendations from the findings:

Governments in Africa must put effort into strengthening the institutional framework for good governance and the rule of law and support the capital and stock markets, ensuring efficient management of the banking sector operations, in order to reduce interest rates, thereby boosting the financing of firms and private sector development to create more job opportunities and to increase growth. This will also create an enabling environment for trust and confidence, which will encourage the private sector to invest as much as possible. Also,

since the bottom line is the availability of capital, the strengthening of the capital and stock markets and the financial systems, in order to attract the needed investment, will go a long way to boost the financing of firms and economic growth.

Furthermore, governments in Africa, in consultation with the private sector, must enact laws for the retention of sizeable amounts of its earnings to boost domestic bank deposits. With the right institutional framework and development of the stock markets, firms will feel comfortable financing with equity, which will, in turn, grow the capital market. The growth of the capital market will then provide the needed finance for the growth of firms.

One major reason adduced for the low retention of funds was the very low investment in research and development and innovation. This is one area that stifles the growth of firms. Firms in Africa should strengthen their research departments to develop innovative ideas. This will be sufficient reason for firms to retain more cash for such investments. Moreover, attractive innovations in a stable environment will attract the needed finance from both internal and external sources. It is only through innovation that investment opportunities will be realised and funded, leading to firm growth. Therefore, a great deal of attention must be given to research and development by firms in Africa.

Governments in Africa can help in this regard by setting up special funds that young firms can tap into for research and development. Countries in Asia have been successful in boosting growth through the direct support by their government for research and development.

Finally, governments of African countries should provide very strong measures against political instability, corruption and conflict over natural resources and political manipulation of regimes, to ensure total economic growth.

6.6 **Limitations of the thesis**

Although the current thesis reveals a very strong and extensive range of implications for regulatory authorities, policy makers and organisation of firms by corporate managers, a detailed analysis and evaluation of the techniques and methods selected is in order.

Firstly, the measurement of capital structure (leverage) was consistent with Fama and French (2002)s' approach, defined as total debt to total assets, which provides a general idea about firms' use of leverage in operations. Also the construction of corporate cash holdings was in line with Bates *et al.* (2009), measured as cash and marketable securities to total assets, which indicates how liquid the firm is in terms of paying it short term obligations when due.

Dividend policy was based on Fama and French (2002), defined as dividend to total assets, which demonstrates a company's performance to its investors. Based on previous studies, the study defined economic growth as real GDP growth per capita, to identify the relative performance of countries. The thesis considered these measurements for the study because they provided close evaluations, because they are progressively use in empirical research and are so far considered as best measurements.

Secondly, numerous techniques were used in the estimations of chapter III, IV and V, such as fixed effect and the application of the generalized method of moment

Thirdly, using the simple fixed effects regression could not provide accurate results for chapter III, IV and V, and so there was the need to consider the application of the general method of moments. The general method of moment (GMM) model provided a consistent and accurate coefficient, which was further tested to see whether the results were affected by serial correlation. The test indicated that serial correlation was not an issue, Sargan and Hansen test were insignificant.

Fourthly, in chapters III, IV and V, the general method of moment estimator developed to tackle dynamic panel data by Arellano and Bond (1991) were used. The method is complex and automatically generates the test for Sargan and Hansen over-identifying restrictions. It was adopted to solve the problems of: (1) the presence of unobserved firm-level effects, and (2) the autoregressive process in the data (Gonzalez and Gonzalez, 2012). The general method of moment further determined if the result of the lag model was unaffected by serial correlation. It offers an efficient estimate of the models and was used to identify whether the lags model used was not serially correlated, by describing the test statistics of the validity of the variables. It enables researchers to test hypothesis about the parameters of the econometric model and provides straightforward results of the first order and second order autocorrelation. The study also considered a check for serial correlation to ensure that the data was free from serial correlation.

Finally, the difficulty of getting data, as well as the possibility of incomplete data, with the resultant regression having outliers about listed firms in African countries, raised more concern. The selection of listed firms might cause more than just sample bias. This thesis avoids the selection bias due to the fact that only listed non-financial firms were considered, and the selection of the 14 African countries were based on the availability of data and mixed with middle and low income countries, high and low populations, war and

non-war countries to provide general and comprehensive results. Other countries were not considered because of the unavailability of data. As the study focuses on corporate finance by examining firm and country level factors in firms' operations and economic growth, firm and country level data was selected. Corporate governance factors were not considered because there was no data on the variables to be examined. To avoid outliers from the data, all financial institutions were excluded from the sample, because their financial base and operations are different from non-financial firms. Also all financial firms and utilities were not considered as their financial decisions are affected by different factors and the rules undertaken by non-financial firms. This is supported by Gonzalez and Gonzalez (2012) and Wiwattanakantang (1999). All the data was transformed using logarithms, application of lag values and the general method of moments to ensure the reliability of the dataset used in this thesis.

6.7 Areas for further research

This thesis offers the following areas for further research.

Firstly, considering the capital structure, cash holding and dividend policy, future work could be done to extend the analysis by disaggregating the firms into sectors, such as service and industry. Such an analysis would assist in identifying the sectors whose firms hand out the greatest or the least dividend, which have cash holdings and have the best capital structure.

Secondly, a hand collecting (survey) technique should be considered for asking the opinions of practitioners, more importantly top managers of firms whether capital structure, cash holdings and dividend policies influence corporate finance operations. Furthermore, it could be investigated whether these firm factors impact on economic growth and finance in African countries using the survey methodology.

Thirdly, further research is needed to compare the countries in terms of cash holdings, dividend policy and capital structure and economic growth by using time series data rather than pooling. In addition, the topic could involve a the comparison between three regions Africa, Asia and the West for comprehensive understanding in terms of capital structure, cash holdings, dividend policy and economic growth to draw lessons for areas of improvement.

Fourthly, the research could be extended to establish the relationship between corporate governance, capital structure and economic development and finance in the African

context. This will broaden the literature about economic growth in Africa and bring a clear idea about whether corporate governance also impacts on economic growth in African countries.

Finally, looking at the results and the need for rapid economic growth in African countries, different characteristics to establish broader areas of growth may be exploited for additional empirical work regarding technology, innovation and economic growth and finance to see how they impact on growth. This will broaden the policies that are needed to ensure rapid economic growth and finance in Africa.

Appendix A: Bloomberg list of fields, fields mnemonic, filed description/definition & measurement

Bloomberg fields	Bloomberg field description/definition	Bloomberg fields/Mnemonic	Measurement / calculations
EBIT	Earnings before interest and taxes	EBIT	Net sales + other operating income – Cost of goods sold (COGS) – Selling, general and administrative expenses (Operating profit (loss))
Total Asset	The total of all short & long-term assets as reported on the balance sheet	BS_TOT_ASSET	Total of short and long term assets on balance sheet
Total Debt	Sum of Short term debt and & long term debt	SHORT_AND_LONG_TERM_DEBT	Short term + Long term debt
Total Market Value	Total market value	TOT_MKT_VAL	Market capitalization + Preferred Equity + Short-Term & Long-Term Debt + Other Long-Term Liabilities – Cash & Equivalents
Dividend paid	Includes dividends actually paid out as cash disbursements including both common stock of the parent company & preferred stock of all companies consolidated	CF_DVD_PAID	Dividend paid
Earnings per share	Bottom-line earnings per share. Includes the effects of all one –time, Non-recurring and extraordinary gains/losses. Uses Basic Weighted Average shares excluding the effects of convertibles.	IS_EPS	Computed as Net Income available to common shareholders divided by the Basic weighted average shares outstanding

Source: Bloomberg

Bloomberg list of fields, fields mnemonic, filed description/definition & measurement (cont.)

Bloomberg fields	Bloomberg field description/definition	Bloomberg fields/Mnemonic	Measurement / calculations
Depreciation expenses	Amount of expenses charged against earnings to write off the cost of plant or machine over its useful life, giving consideration to wear & tear, obsolescence, & salvage value. Includes depreciation that is directly related to or associated with tangible fixed assets. Including amortization of fixed assets that are of PP&E such as leased assets, leasehold improvements, & internal use of software	IS_DEPR_EXP	Depreciation Expenses
Cash & Marketable Securities	Includes cash and liquid securities that can be converted into cash quickly at a reasonable price	CASH_AND_MARKETABLE _SECURITIES	Cash and Near cash + ST investment + LT Marketable securities
Dividend payout ratio	Payout ratio (in percentage)	DIV_PAYOUT_ RATIO	(Cash Common Dividends / Income before XO - Minority Interest – Cash Pref Dvd) * 100
Total equity	Total equity (also known as total book value, Shareholders equity or net assets)	TOTAL_EQUITY	Total Common Equity + Minority Interest + Preferred Equity
Net Income	The profit after all expenses have been deducted. Includes the effects of all one –time, non-recurring, and extraordinary gains, losses, or charges, discontinued operations, changes in accounting standards and minority intersts.	NET_INCOME	Operating Profit (loss)
EBITDA	Earnings before interest, tax, depreciation & amortization	EBITDA	Operating profit (loss) + Depreciation and amortization
Retained earnings	Cumulative undistributed earnings. Includes merger reserve, unrestricted equity and revaluation and legal reserves	BS_RETAINED_EARN	Reserves

Source: Bloomberg

Bloomberg list of fields, fields mnemonic, filed description/definition & measurement (cont.)

Bloomberg fields	Bloomberg field description/definition	Bloomberg fields/ Mnem	measurement/ calculations
Dividend per share	Returns the latest reported annual dividend per share. Override fields equity fundamental year	EQY_DPS	Dividend per share
Long term borrowing	All interest –bearing financial obligations that are not due within a year. Includes convertible, redeemable, retractable debentures, bonds, loans, mortgage debts, sinking funds, & long term bank overdrafts. Includes subordinated capital notes, long term hire purchase & finance lease obligation, long term bills of exchange & bankers acceptances	BS_LT_BORROW	Long term debt
Short term borrowing	Includes bank drafts, short-term debt & borrowings, repurchase agreements (repos) & reverse repos, short-term portion of long term borrowings, current obligations under capital (finance) leases, current portion of hire purchase creditors, trust receipts, bills payable, bills of exchange, banks acceptances, interest bearing loans, & short term mandatory redeemable preferred stock	BS_ST_BORROW	Short term borrowings
Working capital	Current assets reported minus current liabilities	WORKING_CAPITAL	Current Assets – Current Liabilities
Capital expenditure	Amount the company spent on purchases of tangible fixed assets. May include intangible assets when not disclosed separately	CAPITAL_EXPEND	Capital Expenditures
Dividend yield	Indication of the income generated by share of stock	DIVIDEND_YIELD	Calculated by dividing Dividend Trailing 12M Dividend per share for single share companies , by the last price

Source: Bloomberg

Appendix B: Country factors (macroeconomic factors) from World Bank Development Indicators 2012.

Indicator factors	Description	Measurement
GDP constant price 2000 U.S. $ (Real GDP)	Gross domestic product at constant price. GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products	It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 2000 U.S. dollars. Dollar figures for GDP are converted from domestic currencies using 2000 official exchange rates.
GDP per capita constant 2000 U.S $ (Real GDP)	Gross domestic product per capital at constant 2000 U.S. $. GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products	It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant U.S. dollars
Domestic credit provided by banking sector as percentage of GDP	Domestic credit provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data are available (including institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits).	Domestic credit by banking sector (percentage of GDP)

Source: World Bank Development Indicators Database 2012.

Appendix C: Country factors (governance factors) from World Bank (2012) Worldwide Governance Indicators

Governance Indicators/Indexes	Description/Definition	Measurement
Rule of law	Reflects perception of the extents to which agents have confidence in and abide by the rules of society, and in particular the quality of contract of enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence	Estimates are in units of a standard normal distribution, with a mean zero, standard deviation of one, and running from approximately -2.5 (weak) to 2.5 (strong) with high values corresponding to better or governance performance.
Control of corruption	Reflects perception of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.	Estimates are in units of a standard normal distribution, with a mean zero, standard deviation of one, and running from approximately -2.5 (weak) to 2.5 (strong) with high values corresponding to better or governance performance

Source:Worldwide Governance Indicators 2012.

Appendix D: Distributional properties for all selected variables in each country.

Distributional properties for Botswana

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistic
Leverage	0.08	0.03	0.11	0.00	0.81	846.37
Innopp	1.83	1.23	2.03	-0.03	12.82	1114.26
Prof	0.02	0.05	0.31	-1.59	1.37	796.73
Size	3.33	2.91	2.41	-0.67	11.19	203.69
TargPayout	365.87	0.00	4635.90	0.00	58823.5	167506.80
NDTS01	0.03	0.02	0.03	0.00	0.14	79.79
CASHR	0.22	0.16	0.21	0.00	0.92	69.48
MKTBR	1.83	1.23	2.03	-0.03	12.82	1114.26
CF	0.05	0.11	0.33	-1.58	1.39	463.56
NWC	183.14	2.06	1158.09	-4363.06	10686.84	15447.51
CE	-0.09	-0.04	0.26	-3.15	0.01	110223.60
DIV	9.78	2.09	27.11	0.00	216.35	6855.63
ROA	-0.09	0.05	0.83	-7.88	0.49	24097.58
DPY3	0.56	0.00	7.12	0.00	90.95	173906
GDP (real GDP)	6.38	6.56	1.61	3.77	8.83	25.86
DcBasperGDP	17.02	17.82	4.74	9.39	25.75	15.34
lnGDPpercap (log)	8.14	8.19	0.19	7.79	8.38	31.78
Cor	0.89	0.9	0.19	0.59	1.25	5.34
RoL	0.60	0.61	0.06	0.50	0.67	24.35

Distributional properties for Egypt

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistic
Leverage	0.19	0.14	0.20	0.00	2.02	1632.75
Innopp	1.08	0.84	1.32	-0.31	20.23	286403.8
Prof	0.09	0.08	0.09	-0.53	0.39	1116.963
Size	4.96	4.79	1.41	1.46	9.75	50.55
TargPayout	1.14	0.54	16.86	-1.13	457.97	16434387
NDTS01	0.02	0.12	0.03	0.00	0.15	793.71
CASHR	0.16	0.12	0.15	0.01	0.95	498.61
MKTBR	1.08	0.84	1.32	-0.31	20.23	28640.8
CF	0.13	0.12	0.11	-0.53	0.51	565.11
NWC	33.74	12.71	444.94	-2129.31	13080.91	23062804
CE	-0.05	-0.02	0.08	-0.89	0.01	26361.93
DIV	2.31	0.58	6.39	0.00	89.15	418159.2
ROA	0.09	0.09	0.09	-0.57	0.68	2789.47
DPY3	0.01	0.01	0.02	0.00	0.25	2469459
GDP (real GDP)	113.00	108.00	27.80	74.10	163.00	118.01
DcBasperGDP	44.12	46.04	8.97	27.90	54.93	158.69
lnGDPpercap (log)	7.35	7.3	0.15	7.10	7.59	83.73
Cor	-0.48	-0.52	0.18	-0.71	-0.07	97.94
RoL	-0.07	-0.03	0.14	-0.42	0.09	291.18

Distributional properties for Ghana

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistics
Leverage	0.19	0.16	0.23	0.00	2.37	9395.72
Innopp	1.36	0.96	1.17	0.09	7.66	530.04
Prof	0.09	0.07	0.18	-1.10	1.33	3032.42
Size	3.87	3.27	3.06	-0.77	17.45	59.20
TargPayout	0.35	0.21	0.71	-2.09	5.45	5562.51
NDTS01	0.05	0.04	0.04	0.00	0.31	989.80
CASHR	0.09	0.06	0.11	0.00	0.63	720.72
MKTBR	1.36	0.96	1.17	0.09	7.66	530.03
CF	0.13	0.12	0.19	0.00	1.37	1310.85
NWC	104.16	1.33	1283.70	-2107.97	15597.86	133329.5
CE	-0.09	-0.07	0.09	-0.49	0.01	398.37
DIV	17.67	1.64	59.15	0.00	585.90	20831.41
ROA	0.04	0.05	0.17	-1.07	0.86	1423.344
DPY3	0.01	0.01	0.01	0.00	0.01	1669.62
GDP (real GDP)	6.02	5.55	1.73	3.87	10.00	43.100
DcBasperGDP	11.85	12.53	3.54	5.07	15.88	48.101
lnGDPpercap (log)	5.65	5.61	0.15	5.46	5.99	38.27
Cor	-0.09	-0.07	0.15	-0.36	0.13	24.95
RoL	-0.09	-0.07	0.14	-0.44	0.09	77.17

Distributional properties for Ivory Cost

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistics
Leverage	0.18	0.14	0.17	0.00	0.77	106.35
Innopp	7.67	0.69	51.38	-0.04	491.27	34625.79
Prof	0 .09	0.08	0.11	-0.65	0.44	1237.98
Size	4.13	4.41	1.57	-3.37	7.64	438.48
TargPayout	6.17	0.69	56.36	-7.78	652.74	103331.99
NDTS01	.056	0.05	0.036	0.01	0.19	25.975
CASHR	.092	0.06	0.09	0.00	0.69	689.45
MKTBR	7.67	0.69	51.38	-0.04	491.27	34625.79
CF	102 .15	0.13	0.14	-0.41	0.41	25.56
NWC	16.66	7.61	33.16	-79.05	224.99	2036.22
CE	-.05	-0.03	0.04	-0.22	0.01	66.88
DIV	41220.11	2.33	337821	0.00	3363630	52990.11
ROA	.06	0.05	0.11	-0.69	0.60	2636.27
DPY3	.61	0.02	5.42	0.00	58.67	90743.53
GDP (real GDP)	10.40	10.40	0.77	8.33	11.60	115.49
DcBasperGDP	16.05	15.94	1.59	13.62	18.52	33.31
lnGDPpercap (log)	6.39	6.36	0.06	6.31	6.51	43.81
Cor	-.91	-1.09	0.41	-1.24	0.20	220.95
RoL	-1.29	-1.38	0.21	-1.5	-0.82	68.37

Distributional properties for Kenya

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistics
Leverage	0.16	0.10	0.18	0.00	1.08	306.23
Innopp	1.06	0.89	0.77	0.13	5.33	1046.61
Prof	0.10	0.09	0.12	-0.22	1.16	6412.40
Size	4.18	3.89	1.68	-0.51	8.26	0.28
TargPayout	0.42	0.32	2.33	-20.83	36.93	538299.56
NDTS01	0.04	0.03	0.03	0.00	0.15	489.65
CASHR	0.09	0.06	0.09	0.00	0.50	117.04
MKTBR	1.07	0.89	0.77	0.13	5.33	1046.61
CF	0.13	0.11	0.10	-0.14	0.53	73.58
NWC	8.66	4.94	32.69	-227.14	316.43	16591.86
CE	-0.06	-0.04	0.06	-0.34	0.01	377.56
DIV	8.51	0.81	74.44	0.00	1391.67	1580018
ROA	0.06	0.05	0.074	-0.31	0.36	210.58
DPY3	0.01	0.01	0.01	0.00	0.19	211661.8
GDP (real GDP)	14.5	13.40	2.71	10.90	19.80	72.54
DcBasperGDP	28.74	27.64	3.48	24.60	38.15	230.21
lnGDPpercap (log)	6.06	6.03	0.06	5.99	6.18	98.01
Cor	-0.95	-0.95	0.08	-1.07	-0.80	27.63
RoL	-0.97	-0.97	0.08	-1.13	-0.86	37.25

Distributional properties for Morocco

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistics
leverage	0.19	0.14	0.21	0.00	1.34	422.82
Innopp	1.39	1.11	0.81	-0.02	4.44	248.85
Prof	0.11	0.09	0.09	-0.34	0.46	83.73
Size	4.48	4.32	1.47	0.98	8.67	3.95
TargPayout	0.59	0.53	2.23	-30.27	39.71	1284745.37
NDTS01	0.06	0.05	0.04	0.01	0.29	256.35
CASHR	0.07	0.04	0.12	0.00	0.69	1100.17
MKTBR	1.39	1.10	0.81	0.02	4.44	248.85
CF	0.16	0.14	0.11	-1.06	0.53	20597.61
NWC	21.54	11.13	118.20	-1261.53	731.00	51559.79
CE	-0.07	-0.04	0.067	-0.39	0.01	540.41
DIV	3.20	0.90	10.57	0.00	190.12	858379
ROA	0.07	0.06	0.09	-1.14	0.30	105756.5
DPY3	0.051	0.01	0.11	0.00	0.71	7206.65
GDP (real GDP)	44.30	42.40	9.82	30.70	62.60	88.43
DcBasperGDP	48.67	46.92	12.08	28.22	71.21	34.87
lnGDPpercap (log)	7.27	7.25	0.15	7.02	7.55	82.71
Cor	-0.14	-0.21	0.24	-0.39	0.41	222.33
RoL	-0.06	-0.12	0.17	-0.26	0.24	88.62

Distributional properties for Namibia

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistics
leverage	0.12	0.09	0.12	0.00	0.73	106.31
Innopp	2.07	1.06	4.66	-0.16	44.62	34200.07
Prof	-0.08	0.08	0.99	-13.69	0.51	219882.4
Size	6.01	6.28	3.21	-3.33	11.61	11.58
TargPayout	0.14	0.32	1.81	-22.72	2.64	312200.43
NDTS01	0.03	0.03	0.02	0.00	0.16	117.84
CASHR	0.16	0.11	0.18	0.00	0.96	830.29
MKTBR	2.07	1.06	4.66	-0.16	44.62	34200.07
CF	-0.03	0.12	1.00	-13.67	0.54	221643
NWC	389.56	21.15	1149.65	-4363.05	10686.84	11563.23
CE	-0.05	-0.04	0.06	-0.45	0.01	1697.41
DIV	0.65	0.07	3.98	0.00	59.96	391218.1
ROA	-0.08	0.04	0.82	-11.02	1.47	217880.2
DPY3	0.01	0.01	0.01	0.00	0.01	1488.42
GDP (real GDP)		.				
DcBasperGDP		.				
lnGDPpercap (log)		.				
Cor		.				
RoL		.				

NB: No country data was available for Namibia.

Distributional properties for Nigeria

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistics
Leverage	0.17	0.10	0.24	0.00	3.26	59131.57
Innopp	1.40	1.00	1.34	-0.46	11.70	2754.98
Prof	0.09	0.10	0.14	-1.33	0.55	6952.66
Size	3.72	3.80	2.01	-1.97	9.96	6.28
TargPayout	0.52	0.35	3.14	-1.58	84.21	14228517
NDTS01	0.60	0.03	14.92	0.00	392.16	13569146
CASHR	0.08	0.04	0.10	0.00	0.68	2651.14
MKTBR	1.40	1.00	1.34	-0.46	11.70	2758.98
CF	0.14	0.14	0.13	-0.66	0.57	532.44
NWC	35.47	0.88	333.68	-1415.85	5033.21	703686.5
CE	-0.08	-0.06	0.09	0.89	0.01	7530.41
DIV	12.89	1.27	59.27	-25.88	916.28	382376.1
ROA	0.04	0.05	0.20	-2.93	2.26	220435.7
DPY3	0.01	0.01	0.00	0.00	0.01	130146
GDP (real GDP)	57.20	50.60	16.40	38.60	91.30	221.78
DcBasperGDP	17.27	13.20	8.46	8.93	38.59	640.10
lnGDPpercap (log)	6.03	5.95	0.15	5.88	6.33	237.00
Cor	-1.11	-1.13	0.14	-1.33	-0.81	16.53
RoL	-1.26	-1.25	0.14	-1.52	-1.1	126.54

Distributional properties for South Africa

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistic
Leverage	0.16	0.12	0.14	0.00	0.69	457.09
Innopp	1.30	1.11	0.80	-0.04	7.50	4185.28
Prof	0.13	0.13	0.09	-0.59	0.73	4177.16
Size	6.22	6.20	1.62	-0.67	11.54	33.43
TargPayout	0.35	0.34	1.87	-28	30.15	3422475.75
NDTS01	0.03	0.03	0.02	0.00	0.62	2045151.75
CASHR	0.11	0.09	0.09	0.00	1.00	6560.73
MKTBR	1.30	1.11	0.80	-0.03	7.50	4185.28
CF	0.17	0.16	0.09	-0.50	0.79	2793.32
NWC	153.27	47.81	619.47	-4363.05	12091.86	2299511.70
CE	-0.07	-0.05	0.05	-0.86	0.01	49585.09
DIV	41.06	0.13	1760.58	0.00	76418.95	277745376
ROA	0.08	0.08	0.09	-0.96	1.17	55086.95
DPY3	0.01	0.01	0.00	0.00	0.01	159096.90
GDP (real GDP)	150.00	144.00	26.60	112.00	193.00	213.523
DcBasperGDP	132.98	134.08	14.66	114.25	161.98	150.27
lnGDPpercap (log)	8.09	8.04	0.09	7.98	8.24	292.95
Cor	0.37	0.39	0.22	0.03	0.76	115.30
RoL	0.08	0.09	0.05	-0.01	0.23	231.99

Distributional properties for Tanzania

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistic
Leverage	0.08	0.05	0.08	0.00	0.31	4.32
Innopp	2.19	2.21	1.27	0.45	4.64	1.88
Prof	0.28	0.26	0.18	0.08	1.15	264.12
Size	5.07	5.30	0.78	3.59	6.32	2.15
TargPayout	0.66	0.60	0.29	0.07	1.41	0.91
NDTS01	0.05	0.05	0.01	0.01	0.08	0.01
CASHR	0.12	0.07	0.10	0.00	0.33	4.44
MKTBR	2.19	2.21	1.27	0.45	4.64	1.88
CF	0.32	0.31	0.11	0.12	0.60	2.24
NWC	29.68	14.44	46.65	-54.29	147.93	5.41
CE	-0.09	-0.07	0.05	-0.25	-0.01	12.69
DIV	0.82	0.83	0.50	0.04	2.44	7.79
ROA	0.15	0.15	0.08	0.01	0.36	0.94
DPY3	0.01	0.01	0.00	0.00	0.01	3.81
GDP (real GDP)	13.00	12.00	4.20	7.96	21.20	4.89
DcBasperGDP	9.33	8.66	4.94	3.09	17.8	4.95
lnGDPpercap (log)	5.85	5.82	0.17	5.64	6.15	5.06
Cor	-0.64	-0.58	0.25	-1.03	-0.22	2.77
RoL	-0.37	-0.36	0.09	-0.52	-0.25	2.60

Distributional properties for Tunisia

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistic
Leverage	0.22	0.17	0.21	0.00	1.28	238.69
Innopp	1.12	0.86	0.89	0.07	6.59	1861.13
Prof	0.06	0.06	0.07	-0.22	0.30	18.12
Size	3.90	3.72	1.06	2.07	7.01	99.57
TargPayout	0.31	0.39	1.13	0.00	1.77	254723.59
NDTS01	0.05	0.04	0.08	0.01	1.23	206563.85
CASHR	0.12	0.08	0.13	0.01	0.71	443.65
MKTBR	1.12	0.86	0.89	0.07	6.59	1861.13
CF	0.12	0.11	0.09	-0.13	1.1	24605.47
NWC	15.21	7.71	35.23	-83.67	246.04	1654.71
CE	-0.06	-0.04	0.05	-0.46	-0.02	1437.34
DIV	2.80	1.86	3.40	0.00	30.06	4222.89
ROA	0.04	0.05	0.07	-0.29	0.23	63.11
DPY3	0.01	0.01	0.02	0.00	0.15	1200.10
GDP (real GDP)	24.40	23.50	5.64	16.00	33.20	39.66
DcBasperGDP	62.31	60.36	4.82	57.32	76.41	260.97
lnGDPpercap (log)	7.79	7.781	0.18	7.50	8.05	37.86
Cor	-0.01	-0.09	0.22	-0.22	0.55	121.95
RoL	0.03	0.1	0.14	-0.20	0.22	44.73

Distributional properties for Uganda

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistic
Leverage	0.11	0.04	0.14	0.00	0.54	25.32
Innopp	1.38	0.89	1.11	0.30	4.64	27.64
Prof	0.17	0.13	0.15	-0.02	1.15	1369.90
Size	4.73	4.67	1.20	2.10	7.11	1.97
TargPayout	0.44	0.38	0.31	-0.11	1.5	16.45
NDTS01	0.04	0.05	0.02	0.05	0.09	0.55
CASHR	0.08	0.03	0.09	0.03	0.35	22.58
MKTBR	1.38	0.89	1.11	0.30	4.64	27.64
CF	0.18	0.16	0.10	0.00	0.446	3.44
NWC	28.18	15.36	41.37	-39.65	147.93	18.94
CE	-0.06	-0.04	0.09	0.53	0.01	523.79
DIV	1.16	0.60	1.58	0.00	9.19	442.30
ROA	0.08	0.07	0.06	-0.07	0.23	2.68
DPY3	0.01	0.01	0.02	0.00	0.01	44.70
GDP (real GDP)	7.99	7.31	2.85	4.14	13.60	12.25
DcBasperGDP	8.80	8.00	3.90	4.36	17.89	20.13
lnGDPpercap (log)	5.65	5.63	0.19	5.32	5.97	7.81
Cor	-0.83	-0.85	0.09	-0.94	-0.6	22.02
RoL	-0.52	-0.54	0.13	-0.79	-0.35	7.14

Distributional properties for Zambia

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistic
Leverage	0.15	0.09	0.16	0.00	0.66	34.07
Innopp	1.36	0.96	1.58	0.01	11.09	1499.49
Prof	0.19	0.15	0.17	-0.09	0.91	180.15
Size	4.32	4.35	1.62	1.32	8.02	2.41
TargPayout	0.47	0.36	1.11	-0.82	11.11	27456.97
NDTS01	0.04	0.04	0.02	0.01	0.17	150.06
CASHR	0.09	0.06	0.10	0.00	0.66	352.43
MKTBR	1.36	0.96	1.58	0.01	11.09	1499.48
CF	0.22	0.19	0.17	-0.06	1.02	265.29
NWC	1.23	2.04	27.68	-153.06	68.70	664.03
CE	-0.11	-0.08	0.10	-0.61	-0.001	223.36
DIV	5.54	0.69	23.02	0.00	227.44	30797.23
ROA	0.12	0.09	0.12	-0.11	0.61	96.16
DPY3	0.01	0.01	0.001	0.00	0.01	609.10
GDP (real GDP)	3.91	3.60	0.95	2.82	5.92	27.90
DcBasperGDP	9.09	8.25	2.39	6.26	14.96	31.61
lnGDPpercap (log)	5.86	5.81	0.10	5.74	6.08	31.66
Cor	-0.71	-0.73	0.17	-1.03	-0.47	10.77
RoL	-0.51	-0.52	0.06	-0.65	-0.4	6.23

Distributional properties for Zimbabwe

Variable	Mean	Median	Std. Dev.	Min	Max	JB Statistic
Leverage	0.13	0.07	0.15	0.00	0.69	76.35
Innopp	1.62	1.34	1.18	-0.39	5.34	15.86
Prof	0.17	0.17	0.13	-0.03	0.74	53.79
Size	5.80	5.85	2.60	0.49	22.68	1373.14
TargPayout	2.24	0.48	29.77	-100	250	11875.15
NDTS01	0.03	0.03	0.01	0.00	0.07	0.39
CASHR	0.08	0.07	0.07	0.00	0.32	31.11
MKTBR	1.62	1.34	1.18	-0.39	5.34	15.86
CF	0.18	0.18	0.10	-0.02	0.44	1.05
NWC	73.80	7.51	567	-1797.17	4350.00	7723.91
CE	-0.09	-0.05	0.10	-0.42	0.01	41.57
DIV	43.63	0.21	366.60	0.00	3132.99	14920
ROA	0.10	0.10	0.09	-0.09	0.37	1.89
DPY3	0.01	0.01	0.00	0.00	0.14	5613.36
GDP (real GDP)	5.42	5.55	1.20	3.49	6.96	25.41
DcBasperGDP	37.66	33.83	21.80	15.79	103.63	229.43
lnGDPpercap (log)	6.05	6.10	0.24	5.63	6.34	26.21
Cor	-1.13	-1.3	0.32	-1.36	-0.25	136.53
RoL	-1.55	-1.75	0.35	-1.82	-0.71	79.25

References

Abor, J. (2005) The effect of capital structure on profitability: An empirical analysis of listed firms in Ghana. *Journal of risk Finance,* 6 (5), 438-445.

Abor, J. (2008) *Determinants of the capital structure of Ghanaian firms*. African Economic Research Consortium Research Paper, African Economic Research Consortium, 179.

Abor, J. and Bokpin, G.A. (2010) Investment opportunities,corporate finance, and dividend payout policy: Evidence from emerging markets. *Studies in Economics and Finance,* 27 (3), 180-194.

Acharya, V.V., Almeida, H. and Campbell, M. (2007) Is cash negative debt? A hedging perspective on corporate financial policies. *Journal of Financial Intermediation,* 16 (4), 515-554.

Agrawal, A. and Jayaraman, N. (1994) The dividend policies of all-equity firms: A direct test of the free cash flow theory. *Managerial and Decision Economics,* 15, 139-148.

Ahmad, F., Juniad Ul, H., Nasir, R.U., Ali, M. and Ullah, W. (2011) Extension of determinants of capital structure: Evidence from Pakistani non-financial firms. *African Journal of Business Management,* 5 (28), 11375-11385.

Ahmed, H. and Javid, A.Y. (2008) *Dynamics and determinants of dividend policy in Pakistan: Evidence from Karachi stock exchange non-nancial listed firms*. MPRA Paper, University of Munich, 37342.

Ahn, S., Denis, D.J. and Denis, D.K. (2006) Leverage and investment in diversified firms. *Journal of Financial Economics,* 79 (2), 317-337.

Akinlo, O. and Asaolu, T. (2012) Profitability and Leverage : Evidence from Nigerian firms. *Global Journal of Business Research,* 6 (1).

Al-Ajmi, J. and Hussain, H.A. (2011) Corporate dividends decisions: Evidence from Saudi Arabia. *The Journal of Risk Finance,* 12 (1), 41 - 56.

Al-Kuwari, D. (2009) Determinants of the dividend policy in emerging stock exchanges: The case of GCC countries. *Global Economy and Finance Journal,* 2 (2), 38-63.

Al-Malkawi, H.-a.N. (2007) Determinants of corporate dividend policy in Jordan: An application of the tobit model. *Journal of Economic and Administrative Sciences,* 23 (2), 44 - 70.

Al-Malkawi, H.-a.N. (2008) Factors influencing corporate dividend decision: Evidence from Jordanian panel data. *International Journal of Business and Management,* 13 (2), 178-195.

Al-Malkawi, H.-a.N., Rafferty, M. and Pillai, R. (2010) Dividend policy: A review of theories and empirical evidence. *International Bulletin of Business Administration,* (9), 171-200.

Al-Najjar, B. (2013) The financial determinants of corporate cash holdings: Evidence from some emerging markets. *International Business Review,* 22 (1), 77-88.

Al-Najjar, B. and Belghitar, Y. (2011) Corporate cash holdings and dividend payments: Evidence from simultaneous analysis. *Manageria and Decision Economics,* 32 (4), 231-241.

Al-Shubiri, F.N. (2010) Analysis the determinants of market stock price movements: An empirical study of Jordanian commercial banks. *International Journal of Business and Management* 5(10), 137-147.

Alli, K.L., Khan, A.Q. and Ramirez, G.G. (1993) Determinants of corporate dividend policy: A factorial analysis. *Financial Review,* 28 (4), 523-547.

Amidu, M. (2007) Determinants of capital structure of banks in Ghana: An empirical aproach. *Baltic Journal of Management,* 2 (1), 67-79.

Amidu, M. and Abor, J. (2006) Determinants of dividend payout ratios in Ghana. *The Journal of Risk Finance,* 7 (2), 136 - 145.

Anderson, T.W. and Hsiao, C. (1981) Estimation of Dynamic Models with Error Components. *Journal of the American Statistical Association,* 76 (375), 598-606.

Ang, J.S. (1987) *Do dividends matter? A review of corporate dividend theories and evidence*.

Antonios, A. (2010) Stock market and economic growth: An empirical analysis for Germany. *Business and Economics Journal,* BEJ-1 1.

Arellano, M. and Bond, S. (1991) Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies,* 58 (2), 277-297.

Arikawa, Y., Miyajima, H. and Saito, N. (2003) *'Kinyūkiki zengo no tōshi kōdō to kigyō tōchi – kajō saimu mondai to main bank, in: Hanazaki, M., Teranishi, J. (eds.),* . Japan.: University of Tokyo Press

Asquith, P. and Mullins, D.W., Jr. (1986) Signalling with Dividends, Stock Repurchases, and Equity Issues. *Financial Management,* 15 (3), 27-44.

Baker, H.K., Veit, E.T. and Powell, G.E. (2001) Factors influencing dividend policy decisions of Nasdaq firms. *The Financial Review,* (38), 19-38.

Baker, M. and Wurgler, J. (2002) Market timing and capital structure. *Journal of Finance,* 57 (1), 1-32.

Baker, M. and Wurgler, J. (2004) A catering theory of dividends. *The Journal of Finance* LIX, (3).

Baltagi, B. (1995) *Econometric analysis of panel data*.

Bancel, F. and Mittoo, U.R. (2004) Cross-country determinants of capital structure choice: A survey of European firms. *Financial Management,* 33 (4), 103-132.

Banerjee, A.V. (2001)*: The nature of credit constraints: Evidence from an Indian bank*. Department of Economics,MIT, NBER and CEPR.

Bao, D., Chan, K.C. and Zhang, W. (2012) Asymmetric cash flow sensitivity of cash holdings. *Journal of Corporate Finance,* 18 (4), 690-700.

Barro, R.J. and Sala-I-Martin, X. (2003) *Economic growth,* 2nd ed. McGraw Hill: MIT Press.

Baskin, J. (1987) Corporate liquidity in games of monopoly power. *The Review of Economics and Statistics,* 69 (2), 312-319.

Bates, T.W., Kahle, K.M. and Stulz, R.M. (2009) Why do U.S. firms hold so much more cash than they used to? *The Journal of Finance,* 64 (5), 1985-2021.

Baum, C.F., Caglayan, M., Ozkan, N. and Talavera, O. (2004) *The impact of macroeconomic uncertainty on cash holdings for non-financial firms.* ZEW Discussion Paper, Centre for European Economic Research, 04-10.

Baumol, W.J. (1952) The transactions demand for cash: An inventory theoretic approach. *The Quarterly Journal of Economics,* 66 (4), 545-556.

Beattie, V., Goodacre, A. and Thomson, S.J. (2006) Corporate financing decisions: UK survey evidence. *Journal of Business Finance & Accounting,* 33 (9-10), 1402-1434.

Berkovitch, E. and Israel, R. (1996) The Design of Internal Control and Capital Structure. *The Review of Financial Studies,* 9 (1), 209-240.

Black, F. (1976) The dividend puzzle. *Journal of Porfolio Management,* 8-12.

Booth, L., Aivazian, V., Demirguc-Kunt, A. and Maksimovic, V. (2001) Capital structures in developing countries. *Journal of Finance,* 56 (1), 87-130.

Boyd, J.H., Levine, R. and Smith, B.D. (2001) The impact of inflation on financial sector performance. *Journal of Monetary Economics,* 47 (2), 221-248.

Bradley, M., Jarrell, G.A. and Kim, E.H. (1984) On the existence of an optimal capital structure:Theory and evidence. *Journal of Finance* 39 (3), 857-878.

Brealey, R. and Myers, S. (2005) *Principles of corporate finance,* 8th ed. London: McGraw-Hill.

Brounen, D., De Jong, A. and Koedijk, K. (2006) Capital structure policies in Europe: Survey evidence. *Journal of Banking & Finance,* 30 (5), 1409-1442.

Buferna, F., Bangassa, K. and Hodgkinson, L. (2005) *Determinants of capital structure: Evidence from Libya* . Research paper, University of Liverpool, 2005/08.

Caldeira, J. and Loncan, T. (2013) *Capital structure, cash holdings and firm value: A study of Brazilian listed firms*. Universidade Federal do Rio Grande do Sul.

Cassar, G. and Holmes, S. (2003) Capital structure and financing of SMEs: Australian evidence. *Accounting & Finance,* 43 (2), 123-147.

Castanias, R. (1983) Bankruptcy risk and optimal capital structure. *The Journal of Finance,* 38 (5), 1617-1635.

Chakraborty, I. (2010) Capital structure in an emerging stock market: The case of India. *Research in International Business and Finance,* 24 (3), 295-314.

Chandrakumarmangalam, S. and Govindasamy, P. (2010) "Leverage" – An analysis and its impact on profitability with reference to selected cement companies in India. *European Journal of Economics, Finance and Administrative Sciences,* (27), 54-66.

Chazi, A., Terra, P.R.S. and Zanella, F.C. (2010) Theory versus practice: Perspectives of middle-eastern financial managers. *European Business Review,* 22 (2), 1-40.

Chen, J.J. (2004) Determinants of capital structure of Chinese-listed companies. *Journal of Business Research* 57 1341– 1351.

Cheng, S.-R. and Shiu, C.-Y. (2007) Investor protection and capital structure: International evidence. *Journal of Multinational Financial Management,* 17 (1), 30-44.

Collier, P. and Gunning, J.W. (1999) Why has Africa grown slowly? *The Journal of Economic Perspectives,* 13 (3), 3-22.

Collier, P., Hoeffler, A. and Pattillo, C. (2004) Africa's exodus: Capital flight and the brain drain as portfolio decisions. *Journal of African Economies,* 13 (2), 15–54.

Couderc, N. (2005) *Corporate cash holdings: Financial determinants and consequences* . Working Paper, University of Orleans.

Crutchley, C.E. and Hansen, R.S. (1989) A test of the agency theory of managerial ownership, corporate leverage, and corporate dividends. *Financial Management,* 18 (4), 36-46.

D'mello, R., Krishnaswami, S. and Larkin, P.J. (2005) *An Analysis of the Corporate Cash Holding Decision*.

D'mello, R., Krishnaswami, S. and Larkin, P.J. (2008) Determinants of corporate cash holdings: Evidence from spin-offs. *Journal of Banking & Finance,* 32 (7), 1209-1220.

Dawood, M.H.a.K., Moustafa, E.S.I. and El-Hennawi, M. (2011) The determinants of capital structure in Listed Egyptian corporations. *Middle Eastern Finance and Economics,* (9), 83-99.

De Jong, A., Kabir, R. and Nguyen, T.T. (2008) Capital structure around the world: The roles of firm- and country-specific determinants. *Journal of Banking and Finance,* 32 (9), 1954-1969.

Deesomsak, R., Paudyal, K. and Pescetto, G. (2004) The determinants of capital structure: Evidence from the Asia pacific region*. *Journal of Multinational Financial Management,* 14 (4-5), 387-405.

Demetriades, P. and Fielding, D. (2009) *Information, institutions and banking sector development in west Africa.* . Working Paper, University of Leicester, 09/04.

Demirgüç-Kunt, A. and Maksimovic, V. (1999) Institutions, financial markets, and firm debt maturity. *Journal of Financial Economics,* 54 (3), 295-336.

Denis, D.J. and Osobov, I. (2008) Why do firms pay dividends? International evidence on the determinants of dividend policy. *Journal of Financial Economics,* 89 (1), 62-82.

Dhanani, A. (2005) Corporate dividend policy: The views of British financial managers. *Journal of Business Finance & Accounting,* 32 (7-8), 1625-1672.

Dickens, R.N., Casey, K.M. and Newman, J.A. (2002) Bank dividend policy: Explanatory factors. *Quarterly Journal of Business and Economics,* 41 (1-2), 3-12.

Dittmar, A., Mahrt-Smith, J. and Servaes, H. (2003) International corporate governance and corporate cash holdings. *The Journal of Financial and Quantitative Analysis,* 38 (1), 111-133.

Dittmar, A. and Thakor, A. (2005) Why Do Firms Issue Equity? *The Journal of Finance,* 62 (1), 1-54.

Drobetz, W. and Grüninger, M. (2007) Corporate cash holdings: Evidence from Switzerland. *Financial Markets and Portfolio Management,* 21 (3), 293-324.

Easterbrook, F.H. (1984) Two agency-cost explanations of dividends. *The American Economic Review,* 74 (4), 650-659.

Evbayowieru, A.D. (2011) Dividend is relevant: A restatement. *African Research Review. An International Multidisciplinary Journal, Ethiopia,* 5 (4), 60-72.

Faccio, M. and Lang, L.H.P. (2002) The ultimate ownership of western European corporations. *Journal of Financial Economics,* 65 (3), 365-395.

Fama, E.F. and French, K.R. (1998) Taxes, financing decisions, and firm value. *The Journal of Finance,* 53 (3), 819-843.

Fama, E.F. and French, K.R. (2001) Disappearing dividends: Changing firm characteristics or lower propensity to pay? *Journal of Financial Economics,* 60 (1), 3-43.

Fama, E.F. and French, K.R. (2002) Testing trade-off and pecking order predictions about dividends and debt. *Review of Financial Studies,* 15 (1), 1-33.

Fama, E.F. and French, K.R. (2005) Financing decisions: who issues stock? *Journal of Financial Economics,* 76 (3), 549-582.

Fan, J.P.H., Rui, O.M. and Zhao, M. (2008) Public governance and corporate finance: Evidence from corruption cases. *Journal of Comparative Economics,* 36 (3), 343-364.

Fan, J.P.H., Titman, S. and Twite, G. (2012) An international comparison of capital structure and debt maturity choices. *Journal of Financial and Quantitative Analysis,* 47 (1), 23-56.

Faulkender, M., Milbourn, T. and Thakor, A. (2006) Capital structure and dividend policy: two sides of the same coin. *Washington University in St. Louis, working paper*.

Faulkender, M. and Wang, R. (2006) Corporate Financial Policy and the Value of Cash. 61 (4), 1957-1990.

Ferreira, M.A. and Vilela, A.S. (2004) Why do firms hold cash? Evidence from EMU countries. *European Financial Management,* 10 (2), 295-319.

Firer, C.R.S.A., Ewesterfield, R.W. and Jordan, B.D. (2004) *Fundamentals of corporate finance*, 3rd ed. Bershire: McGraw Hill.

Fischer, E.O., Heinkel, R. and Zechner, J. (1989) Dynamic capital structure choice: Theory and tests. *The Journal of Finance,* 44 (1), 19-40.

Fisher, G.R. (1961) Some factors influencing share prices. *Economic Journal,* 71 (281), 121-141.

Franc-Dabrowska, J. (2009) Does dividend policy follow the capital structure theory. *Managing Global Transition* 7(4), 367-382.

Frank, M.Z. and Goyal, V.K. (2003) Testing the pecking order theory of capital structure. *Journal of Financial Economics,* 67 (2), 217-248.

Frank, M.Z. and Goyal, V.K. (2004) The effect of market conditions on capital structure adjustment. *Finance Research Letters,* 1 (1), 47-55.

Frank, M.Z. and Goyal, V.K. (2009) Capital structure decisions: Which factors are reliably important? *Financial Management,* 38 (1), 1-37.

Frankfurter, G.M. and Wood , B.G. (2002) Dividend policy theories and their empirical tests. *International Review of Financial Analysis,* 11 (2), 111-138.

Garcia-Teruel, P.J. and Martinez-Solano, P. (2008) On the determinants of SME cash holdings: Evidence from Spain. *Journal of Business Finance & Accounting,* 35 (1-2), 127-149.

Gatev, E. and Strahan, P.E. (2006) Banks' advantage in hedging liquidity risk: Theory and evidence from the commercial paper market. *The Journal of Finance,* 61 (2), 867-892.

Gedajlovic, E., Shapiro, D.M. and Buduru, B. (2003) Financial ownership, diversification and firm profitability in Japan. *Journal of Management and Governance,* 7 (3), 315-335.

Gonzalez, V.M. and Gonzalez, F. (2012) Firm size and capital structure: Evidence using dynamic panel data. *Applied Economics,* 44 (36), 4745-4754.

Gordon, M.J. and Shapiro, E. (1956) Capital equipment analysis: The required rate of profit. *Management Science Journal,* 3 (1), 102-110.

Graham, J.R. (2003) Taxes and corporate finance: A review. *Review of Financial Studies,* 16 (4), 1075-1129.

Graham, J.R. and Harvey, C.R. (2001) The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics,* 60 (2–3), 187-243.

Grossman, S.J. and Hart, O.D. (1980) Takeover bids, the free-rider problem, and the theory of the corporation. *The Bell Journal of Economics,* 11 (1), 42-64.

Gul, F.A. and Kealey, B.T. (1999) Chaebol, investment opportunity set and corporate debt and dividend policies of Korean companies. *Review of Quantitative Finance and Accounting,* 13 (4), 401-416.

Guney, Y., Ozkan, A. and Ozkan, A. (2003) *Additional international evidence on corporate cash holdings*. Working Papers, University of Surrey.

Guney, Y., Ozkan, A. and Ozkan, N. (2007) International evidence on the non-linear impact of leverage on corporate cash holdings. *Journal of Multinational financial management,* 17 (1), 45-60.

Gupta, S., Clements, B., Baldacci, E. and Mulas-Granados, C. (2005) Fiscal policy, expenditure composition, and growth in low-income countries. *Journal of International Money and Finance,* 24 (3), 441-463.

Gurcharan, S. (2010) A review of optimal capital structure determinant of selected Asian countries. *International Research Journal of Finance and Economics,* (47), 31-41.

Harford, J., Mansi, S.A. and Maxwell, W.F. (2008) Corporate governance and firm cash holdings in the US. *Journal of Financial Economics,* 87 (3), 535-555.

Harris, M. and Raviv, A. (1991) The theory of capital structure *Journal of Finance,* 46 (1), 297-356.

Honohan, P. and Beck, T. (2007) *Making Finance Work for Africa* The International Bank for Reconstruction and Development World Bank, 2006038456.

Hossain, F. and Ali, A. (2012) The impact of firm specific factors on capital structure decision : An empirical study of Bangladesi company. *International Journal of Business Research and Management,* 3 (4), 163-182.

Hovakimian, A., Hovakimian, G. and Tehranian, H. (2004) Determinants of target capital structure: The case of dual debt and equity issues. *Journal of Financial Economics,* 71 (3), 517-540.

Iskandar-Datta, M.E. and Jia, Y.H. (2012) Cross-country analysis of secular cash trends. *Journal of Banking & Finance,* 36 (3), 898-912.

Isshaq, Z., Bokpin, G.A. and Onumah, J.M. (2009) Corporate governance, ownership structure, cash holdings and firm value on the Ghana stock exchange. *The Journal of Risk Finance,* 10 (5), 488-499.

Jani, E., Hoesli, M. and Bender, A. (2004) *Corporate cash holdings and agency conflicts*. Working Paper, University of Geneva

Jensen, G.R., Solberg, D.P. and Zorn, T.S. (1992) Simultaneous determination of insider ownership, debt, and dividend policies. *The Journal of Financial and Quantitative Analysis,* 27 (2), 247-263.

Jensen, M.C. (1986) Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review,*, 76 (2), 323-329.

Jensen, M.C. and Meckling, W.H. (1976) Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3 (4), 305-360.

Jõeveer, K. (2006) *Sources of capital structure: Evidence from transition countries* Center for Economic Research and Graduate Education Working Paper, Charles University, 306.

John, K. and Williams, J. (1985) Dividends, dilution, and taxes: A signaling equilibrium. *Journal of Finance*, 400 (4), 1053-1070.

John, T.A. (1993) Accounting measures of corporate liquidity, leverage, and costs of financial distress. *Financial Management*, 22 (3), 91-100.

Kalcheva, I. and Lins, K.V. (2007) International evidence in cash holdings and expected managerial agency problems. *Review of Finance Studies*, 20 (4), 1087-1112.

Kayo, E.K. and Kimura, H. (2011) Hierarchical determinants of capital structure. *Journal of Banking & Finance*, 35 (2), 358-371.

Keynes, J.M. (1936) *The general theory of employment, interest and money*. London: Harcourt Brace.

Khan, M. and Sendahji, A. (2000) *Financial development and economic growth: An overview*. IMF Working Paper, International monetary fund, WP/00/209.

Kim, C.-S., Mauer, D.C. and Sherman, A.E. (1998) The determinants of corporate liquidity: Theory and evidence. *The Journal of Financial and Quantitative Analysis*, 33 (3), 335-359.

Kim, H. and Gu, Z. (2009) Financial features of dividend-paying firms in the hospitality industry: A logistic regression analysis. *International Journal of Hospitality Management*, 28 (3), 359-366.

Kim, J., Kim, H. and Woods, D. (2011a) Determinants of corporate cash-holding levels: An empirical examination of the restaurant industry. *International Journal of Hospitality Management*, 30 (3), 568-574.

Kim, S., Seo, J.-Y. and Sohn, P. (2011b) SMEs' Capital structure behaviour on cash holdings to Korean financial crisis : The evidence from emerging market. *African Journal of Business Management*, 5 (34), 13095-13115.

Korajczyk, R.A. and Levy, A. (2003) Capital structure choice: macroeconomic conditions and financial constraints. *Journal of Financial Economics*, 68 (1), 75-109.

Kusnadi, Y. (2005) *Corporate governance mechanisms and corporate cash holdings*. Working paper, Hong Kong University of science and Technology.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A. and Vishny, R. (2000) Investor protection and corporate governance. *Journal of Financial Economics* 58 (1-2), 3-27.

Lang, L., Ofek, E. and Stulz, R. (1996) Leverage, investment, and firm growth. *Journal of Financial Economics,* 40 (1), 3-29.

Levine, R. (2004) *Financial and growth: Theory and evidence* NBER Working Paper Cambridge, 10766.

Levine, R. and Zervos, S. (1998) Stock markets, banks, and economic growth. *The American Economic Review,* 88 (3), 537-558.

Lintner, J. (1956) Distribution of incomes of corporations among dividends, retained earnings, and taxes. *The American Economic Review,* 46 (2), 97-113.

Lloyd, W.P., Jahera, J.S. and Page, D.E. (1985) Agency costs and dividend payout ratios. *Quarterly Journal of Business and Economics,* 24 (3), 19-29.

Long, M.S. and Malitze, I.B. (1985) Investment patterns and financial leverage IN: Benjamin M. Friedman, E. (ed.) *Corporate capital structures in the United States*. Chicago: University of Chicago 325-352.

Love, I. (2011) *Empirical analysis of corporate savings in Egypt*. Policy Research Working Paper, The World Bank Development ResearchGroup.

Mankiw, N.G., Romer, D. and Weil, D.N. (1992) A contribution to the empirics of economic growth. *The quarterly journal of economics,* 107 (2), 407-437.

Manos (2001) *Capital structure and dividend policy: Evidence from emerging markets: ,* PhD thesis, University of Birmingham.

Marsh, P. (1982) The choice between equity and debt: An empirical study. *Journal of Finance,* 37 (1), 121-144.

Meltzer, A.H. (1963) The demand for money: A cross section study of business firms. *The Quarterly Journal of Economics,* 77 (3), 405-422.

Michaelas, N., Chittenden, F. and Poutziouris, P. (1999) Financial policy and capital structure choice in UK SMEs: Empirical evidence from company panel data. *Small Business Economics,* 12 (2), 113-130.

Mikkelson, W.H. and Partch, M.M. (1986) Valuation effects of security offerings and the issuance process. *Journal of Financial Economics,* 15 (1-2), 31-60.

Miller, H.M. (1977) Debt and taxes. *Journal of Finance,* 32 (2), 261-275.

Miller, H.M. and Rock, K. (1985) Dividend policy under asymmetric information. *Journal of Finance,* 40 (4), 1031-1051.

Miller, M.H. and Modigliani, F. (1961) Dividend ppolicy, growth, and the valuation of shares. *The Journal of Business,* 34 (4), 411-433.

Miller, M.H. and Orr, D. (1966) A model of the demand for money by firms. *The Quarterly Journal of Economics,* 80 (3), 413-435.

Milton, H. and Raviv, A. (1990) Capital structure and the informational role of debt. *The Journal of Finance,* 45 (2), 321-349.

Modigliani, F. and Miller, H.M. (1958) The cost of capital, corporation finance and the theory of nnvestment. *The American Economic Review,* 48 (3), 261-297.

Modigliani, F. and Miller, H.M. (1963) Corporate income taxes and the cost of capital: A correction. *The American Economic Review,* 53 (3), 433-443.

Muradoglu, G. and Sivaprasad, S. (2007) *An empirical analysis of capital structure and abnormal returns*. SSRN Working Paper, Cass Business School Available from:

.

Muradoğlu, Y.G. and Sivaprasad, S. (2012) Using firm ‐ level leverage as an investment strategy. *Journal of Forecasting,* 31 (3), 260-279.

Murekefu, M.a.A. and Ouma, O.P. (2009) The relationship betwee dividend payout and firm performance: A study of listed companies in Kenya. *European Scientific Journal,* 8 (9), 199-214.

Myers, S.C. (1977) Determinants of corporate borrowing. *Journal of Financial Economics,* 5 (2), 147-175.

Myers, S.C. (1984) The capital structure puzzle. *Journal of Finance,* 39 (3), 575-592.

Myers, S.C. (2001) Capital Structure. *The Journal of Economic Perspectives,* 15 (2), 81-102.

Myers, S.C. and Majluf, N.S. (1984) Corporate Financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics,* 13 (2), 187-221.

Naceur, S., Goaied, M. and Belanes, A. (2006) On the determinants and dynamics of dividend policy. *International Review of Finance,* 6 (1-2), 1-23.

Nasr, S. and The World Bank (2004) *Access to finance and economic growth in Egypt*. Bank, T.W., 41305. Available from: www.siteresources.worldbank.org/INTEGYPT [Accessed 22 November 2013].

Ndikumana, L. and Boyce, J.K. (2002) *Public debts and private assets: Explaining capital flight from sub-saharan African countries.* Political Economy Research Institutes Working Paper, University of Massachusetts, Amherst, 48.

Negash, M. (2001) Debt, Tax shield and bankruptcy costs : Some evidence from JSE. *Investment Analysis Journal,* (54).

Nickell, S. (1981) Biases in dynamic models with fixed effects. *Econometrica: Journal of the Econometric Society,* 1417-1426.

Nor, F.M., Haron, R., Ibrahim, K., Ibrahim, I. and Norazlan, A. (2011) Determinants of target capital structure: Evidence on south east Asia countries. *Journal of Business and Policy Research,* 6 (3), 39-61.

Obstfeld, M. (1994) Risk-taking, global diversification, and growth. *The American Economic Review,* 84 (5), 1310-1329.

Ogundipe, L.O., Ogundipe, S.E. and Ajao, S.K. (2012a) Cash holding and firm characteristics: Evidence from Nigeria emerging market. *Journal of Business and Economics,* 1 (2), 45-57.

Ogundipe, S.E., Salawu, R.O. and Ogundipe, L.O. (2012b) The determinants of corporate cash holdings in Nigeria: Evidence from general method of moments *International Journal of Social and Human Sciences,* 6, 96-102.

Olayinka, A. (2011) Determinants of capital structure : Evidence from Nigeria panel data. *African Econonmic and Business Review,* 9 (1).

Opler, T., Pinkowitz, L., Stulz, R. and Williamson, R. (1999) The determinants and implications of corporate cash holdings. *Journal of Financial Economics,* 52 (1), 3-46.

Ozkan, A. (2001) Determinants of capital structure and adjustment to long run target: Evidence from UK company panel data. *Journal of Business Finance and Accounting,* 28 (1-2), 175-198.

Ozkan, A. and Ozkan, N. (2004) Corporate cash holdings: An empirical investigation of UK companies. *Journal of Banking & Finance,* 28 (9), 2103-2134.

Pagano, M. (1993) Financial markets and growth: An overview. *European Economic Review,* 37 (2–3), 613-622.

Paskelian, O.G., Bell, S. and Nguyen, C.V. (2010) Corporate governance and cash holdings: A comparative analysis of Chinese and Indians firms. *The International Journal of Business and Finance Research,* 4 (4), 58-73.

Petersen, M.A. and Rajan, R.G. (1997) Trade credit: Theories and evidence. *The Review of Financial Studies,* 10 (3), 661-691.

Phillips, P.A. and Sipahioglu, M.A. (2004) Performance implications of capital structure: evidence from quoted UK organisations with hotel interests. *The Service Industries Journal* 24 (5), 31–51.

Pinkowitz, L., Stulz , R. and Williamson, R. (2006) Does the contribution of corporate cash holdings and dividends to firm value depend on governance? A cross-country analysis. *The Journal of Finance,* 61 (6), 2725-2751.

Pinkowitz, L., Stulz, R.M. and Williamson, R. (2003) *Do firms in countries with poor protection of investor rights hold more cash*. NBER Working Paper, National Bureau of Economic Research, 10188. Available from: http://www.nber.org/papers/w10188.

Pinkowitz, L. and Williamson, R. (2001) Bank Power and Cash Holdings: Evidence from Japan. *The Review of Financial Studies,* 14 (4), 1059-1082.

Psillaki, M. and Daskalakis, N. (2009) Are the determinants of capital structure country or firm specific. *Small Busness Economics* 33, 319–333.

Rajan, R.G. and Zingales, L. (1995) What do we know about capital structure? Some evidence from international data. *Journal of Finance*, 50 (5), 1421-1460.

Ramlall, I. (2009) Determinants of capital structure among non- quoted Mauritian firms under specific of leverage : Looking for a modified pecking order theory. *International Research Journal of Finance and Economics,* (31).

Rao, N.V., Al-Yahyaee, K.H.M. and Syed, L.a.M. (2007) Capital structure and financial performance: Evidence from Oman. *Indian Journal of Economics and Business,* 6 (1), 45-64.

Rettl, D. (2011) *Growth opportunities, cash holdings, and payout policy*. Vienna Graduate School of Finance working paper, Vienna Graduate School of Finance.

Riddick, L.A. and Whited, T.M. (2009) The corporate propensity to save. *The Journal of Finance,* 64 (4), 1729-1766.

Robb, A.M. and Robinson, D.T. (2010) *The capital structure decisions of new firms*. NBER Working Paper National Bureau of Economic Research, 16272. Available from: http://www.nber.org/papers/w16272.

Rozeff, M.S. (1982) Growth, beta and agency costs as determinants of dividend payout ratios. *Journal of Financial Research,* 5 (3), 249-259.

Ruland, W. and Zhou, P. (2005) Debt, diversification, and valuation. *Review of Quantitative Finance and Accounting,* 25 (3), 277-291.

Saddour, K. (2006) *Determinants and the value of cash holdings: Evidence from French firms*. CEREG Working Paper, Universite Paris 7088.

Salawu, R.O. and Agboola, A.A. (2008) The determinants of capital structure of larger non-financial listed firms in Nigeria. *The International Journal of Business and Finance Research,* 2 (2), 75-84.

Schultz, P. (2003) Psedo market timing and the long-run underperforming of IPOs. *Journal of Finance,* 58 (483-517).

Schwartz, E. and Aronson, J.R. (1967) Some surrogate evidence in support of the concept of optimal financial structure. *The Journal of Finance,* 22 (1), 10-18.

Shah, A. (2011) The corporate cash holdings: Determinants and implications. *African Journal of Business Management,* 5 (34), 12939-12950.

Sheel, A. (1994) Determinants of capital structure choice and empirics on leverage behaviour: A comparative analysis of hotel and manufacturing firm. *Journal of Hospitality and Tourism,* 17 (3), 1-16.

Shleifer, A. and Vishny, R. (1992) Liquidation values and debt capacity: A market equilibrium approach. *Journal of Finance,* 47 (4), 1343-1366.

Shyam-Sunder, L. and Myers, S.C. (1999) Testintg static trade-off against pecking order models of capital strcuture. *Journal of Financial Economics,* 51, 219-244.

Song, J. and Philippatos, G. (2004) *Have we resolved some critical issues related to international capital structure? Empirical evidence from the 30 OECD countries*. Working Paper, University of Tennessee.

Stulz, R.M. (1990) Managerial discretion and optimal financing policies. *Journal of Financial Economics,* 26 (1), 3-27.

Sufi, A. (2009) Bank Lines of Credit in Corporate Finance: An Empirical Analysis. *The Review of Financial Studies,* 22 (3), 1057-1088.

Sunder, L.S. and Myers, S.C. (1999) Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*, 51 (2), 219-244.

Tebogo, B. (2008) *Capital structure and dividend policy discussion: How does standard chartered bank Botswana contribute to this discussion*.

Titman, S. and Wessels, R. (1988) The determinants of capital structure choice. *The Journal of Finance,* 43 (1), 1-19.

Turen, S. and Salman, S.Y.H. (2012) What really determines the dividend policy in financial institutions: A case of Bahrain. *Middle Eastern Finance and Economics,* (18), 56-66.

United Nations (2002) *Botswana cuntry profile*. Johannesburg. Available from: www.un.org/esa/agenda21/natlinfo/wssd/botswana.pdf [Accessed 13th march 2013].

Uremadu, S.O., Egbide, B.C. and Enyi, P.E. (2012) Working capital management, liquidity and corporate profitability among quoted firms in Nigeria: Evidence from the productive sector. *International Journal of Academic Research in Accounting, Finance and Management Sciences,* 2 (1), 80-95.

Wald, J. (1999) Capital structure with dividend restrictions. *Journal of Corporate Finance,* 5 (2), 193-208.

Ward, M. and Price, A. (2006) *Turning vision into value: Corporate finance for non-financial executives*. Pretoria: Van Schaik.

Welch, I. (2004) Capital structure and stock returns. *Journal of Political Economy* 112 (1), 106-131.

Williamson, O.E. (1988) Corporate Finance and Corporate Governance. *Journal of Finance,* 43, 567-591.

Wiwattanakantang, Y. (1999) An empirical study on the determinants of the capital structure of Thai firms. *Pacific-Basin Finance Journal,* 7 (3–4), 371-403.

World Bank (2012) Worldwide governance indicators database.

Xia, L. and Fang, Y. (2005) Government control, institutional environment and firm value: Evidence from the Chinese securities market. *Economic Research Journal,* 5, 40-51.

Yuan, Y. and Kazuyuki, M. (2011) *Impact of the debt ratio on firm investment: A case study of listed companies in China*. The Research Institute of Economy, Trade and Industry Discussion Paper University of Tokyo, 08-E-011.